CF-RAI-USAA-DPP-RAM-2006-00104

Expanded Number **CF-RAI-USAA-DPP-RAM-2006-00104**

External ID

Title

Final Report of the International Tuberculosis Campaign, July 1, 1948 to June 30, 1951 Inception, Organization, PR, Funding, Supply, personnel, statistics, country operations results. Part 2

Date Created / From Date | *Date Registered* | *Date Closed / To Date*

Primary Contact

Home Location **CF/RAF/ZW/Z029_-1991-000054656 (In Container)**

7/24/2006 at 10:59 AM **7/24/2006 at 10:59 AM**

Fl3: Record Copy? **No**

Owner Location **History Related Records =60909132**

Current Location/Assignee **Record & Archive Manage Related Functions=80669443 since 7/24/2006 at 10:59 AM**

Fl2: Status Certain? **No**

d01: In, Out, Internal Rec or Rec Copy

Contained Records Container **CF/RA/BX/EB/HS/1991/T006: Health, Emergency, Local Costs**

Date Published | *Fd3: Doc Type - Format* | *Da1:Date First Published* | *Priority*

Record Type **A01 DPP-RAM ITEM**

Document Details **Record has no document attached.**

Print Name of Person Submit Image | *Signature of Person Submit* | *Number of images without cover*

Upasana Young | | 50

MALTA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN MARCH—JUNE 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
March 1950	4,917	3,711	4,917	3,711	13	2
April	10,431	7,710	15,348	11,421	13	2
May	19,914	13,965	35,262	25,386	14	2
June	19,706	13,384	54,968	38,770	14	2
Total ...	54,968	38,770	—	—	—	—

NOTE: Figures for the delayed programme on the island of Gozo in the Spring of 1951 were not available at the time of publication.

POLAND

BACKGROUND

BCG vaccination, by the oral method, was instituted in Poland for newborn children in 1926. Vaccine was prepared by the State Institute of Hygiene from a BCG strain received from the Pasteur Institute, Paris, in November 1925. Trials were made with subcutaneous vaccination, but this method was not adopted. The war interrupted BCG work in Poland, which was resumed in January 1946, when the State Institute of Hygiene again began BCG production from a new strain received from the Pasteur Institute.

The Danish Red Cross initiated its BCG work in Poland in April 1947, and continued for over one year.

The agreement between the Government of Poland and the ITC was signed on May 19, 1948. Danish Red Cross personnel were assumed by the ITC which officially began work on July 1, 1948.

The campaign in Poland was a nation-wide mass vaccination programme for persons up to 18 years of age. As more national doctors and nurses became available for the campaign, the international staff was gradually reduced, and the ITC phase was completed at the end of 1949.

The Government Liaison Officer for the programme was Dr. J. Belke.

PROGRESS OF THE CAMPAIGN

Because the Polish Government was eager to carry out the campaign as quickly as possible, ITC provided a large number of doctors and nurses. The teams were concentrated in one area at a time and shifted from province to province until the entire country was covered.

The greatest number of national vaccinators at work in one month was 90; the greatest number of international vaccinators was 50.

A total of 5,514,036 persons were tested and 2,535,026 vaccinated in the combined Danish Red Cross and ITC campaigns. (For month-by-month breakdown, see Table 1). Complete statistical documentation on the programme has been prepared by the WHO Tuberculosis Research Office and published by ITC in "Mass BCG Vaccination in Poland, 1948—49", issued by ITC in December 1950.

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

Originally, only the Moro patch test was used for children up to 12 years of age; after April 1949, a Mantoux 10 T.U. test was given to non-reactors to Moro, at the request of the Polish Tuberculosis Institute. For persons 12 years of age and over, Mantoux 1 T.U. and 10 T.U. were used throughout. Vaccine and tuberculin were provided by ITC from the State Serum Institute, Copenhagen.

CONTINUATION

As the ITC phase was completed, the Government set up vaccination centres province by province, usually attached to the central tuberculosis dispensaries. At the end of the campaign, 16 permanent centres were established, one in each of the 14 provinces, and one each in Warsaw and Lodz; mobile teams operated out of each centre. ITC left medical supplies and vehicles in Poland for the continuing programme.

Arrangements were also made by ITC to provide tuberculin jelly and tuberculin stock solution for a period of three years.

Vaccine is being produced in the enlarged BCG laboratory in Lublin, which ITC has assisted with equipment and chemicals.

POLAND

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN MAY 1947—DECEMBER 1949

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
y-December 1947 .... [1]	301,993	85,073	301,993	85,073	[2]	[2]
uary 1948	52,875	14,691	354,868	99,764		24
ıruary	89,459	23,190	444,327	122,954		24
rch	72,578	24,278	516,905	147,232		22
ril	84,617	25,743	601,522	172,975		18
y	104,611	43,054	706,133	216,029	[2]	21
ıe	78,870	34,168	785,003	250,197		29
y	106,956	52,724	891,959	302,921		33
gust	189,734	98,330	1,081,693	401,251		32
ıtember	248,525	125,353	1,330,218	526,604		33
tober	290,816	153,837	1,621,034	680,441	40	38
vember	297,638	148,322	1,918,672	828,763	66	32
cember	148,450	77,244	2,067,122	906,007	66	32
ıuary 1949	282,070	135,800	2,349,192	1,041,807	65	33
ɔruary	307,384	142,138	2,656,576	1,183,945	70	50
ırch	413,081	200,569	3,069,660	1,384,514	70	47
ril	291,524	130,557	3,361,184	1,515,071	87	41
ay	372,918	185,860	3,734,102	1,700,931	90	40
ne	421,492	200,201	4,155,594	1,901,132	90	34
ıly	257,258	127,295	4,412,852	2,028,427	90	24
ugust	275,253	139,960	4,688,105	2,168,387	76	7
eptember	213,666	98,962	4,901,771	2,267,349	76	4
)ctober	222,353	101,818	5,124,124	2,369,167	76	1
Jovember	198,895	83,023	5,323,019	2,452,190	76	1
)ecember	191,017	82,836	5,514,036	2,535,026	76	1
·and total including pre-ITC work	5,514,036	2,535,026	—	—	—	—
ɔtal during ITC phase only .	4,729,033	2,284,829	—	—	—	—

[1]) Pre-ITC work by Danish Red Cross.
[2]) Not available.

YUGOSLAVIA

BACKGROUND

In 1926 the Institute of Hygiene, Belgrade, began production of BCG. Vaccination began early in 1927 and continued on a limited scale until the beginning of World War II. The oral method was used almost exclusively.

In the Autumn of 1946, a Danish Red Cross team conducted an anti-tuberculosis programme in a limited area of Yugoslavia, in the course of which non-reactors to the tuberculin tests were vaccinated by the intradermal method.

An agreement between the Government of Yugoslavia and the ITC was signed in May 1948 and the ITC Mission arrived in August. The programme was a nation-wide mass campaign, covering persons from 1 to 18 years — later extended to include persons up to 25 years of age.

The ITC Mission was scheduled to remain until the end of 1950, and actually completed its work in December 1950.

Directing the campaign for the Government of Yugoslavia was Dr. R. Neubauer, Chief of the Tuberculosis Division of the Central Government, assisted by Dr. D. Sudic as Liaison Officer.

PROGRESS OF THE CAMPAIGN

Yugoslavia established 15 national teams at the beginning of the programme and work was begun simultaneously in the six independent Republics of the country. In some of the Republics, it was possible to concentrate the teams in one area and progressively cover the entire Republic. In others, however, transport, weather conditions, and organizational difficulties made such systematic coverage impossible. The poor roads in Yugoslavia and the shortage of workshops and mechanics made it necessary for ITC to provide special automobile mechanics in Yugoslavia to maintain the team cars.

The greatest number of national vaccinators at work in one month was 53; the greatest number of international vaccinators was 7.

A total of 3,010,238 persons were tested and 1,554,862 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

During the entire ITC phase of the campaign, children up to 12 were tested with Moro patch only; persons between 12 and 14, Moro patch and Mantoux 10 T.U.; persons of 15 and over received Mantoux 1 T.U. and Mantoux 10 T.U.

Tuberculin dilutions ready for use, tuberculin jelly, and vaccine were provided by ITC from the State Serum Institute, Copenhagen, during the entire campaign.

CONTINUATION

BCG vaccination is now obligatory in Yugoslavia in age-groups from 0—25. In each of the six People's Republics and in the autonomous region of Vojvodina, the Tuberculosis Divisions of the Health Departments have assumed responsibility for continuation of BCG work through tuberculosis dispensaries, children's institutions and maternity homes. Twenty-eight mobile teams are working from the same number of tuberculosis dispensaries.

It is estimated that about 2,000,000 persons will be tested during 1951—1952, and at the same time a revaccination programme is being undertaken. The Government is continuing active BCG educational work for the medical profession and general public.

Vehicles and medical equipment for the continued programme have been left in Yugoslavia by ITC.

ITC has assisted the BCG production centre at the Institute of Hygiene in Belgrade with equipment and supplies for vaccine production. Since December 1950, this laboratory has provided the vaccine for the continued work in Yugoslavia. Arrangements have been made by ITC to provide tuberculin stock solution and tuberculin jelly from Copenhagen until the end of 1953. Tuberculin dilutions are being made at the Institute of Hygiene in Zagreb.

YUGOSLAVIA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN AUGUST 1948—DECEMBER 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
August 1948	11,863	2,336	11,863	2,336	30	6
September	13,925	2,675	25,788	5,011	30	6
October	64,851	23,230	90,639	28,241	28	6
November	69,656	32,997	160,295	61,238	28	6
December	105,064	54,201	265,359	115,439	28	6
January 1949	61,498	32,483	326,857	147,922	28	6
February	69,371	33,809	396,228	181,731	15	5
March	133,578	74,725	529,806	256,456	45	5
April	179,238	102,583	709,044	359,039	45	5
May	155,990	82,381	865,034	441,420	53	6
June	159,635	94,309	1,024,669	535,729	53	6
July	126,280	66,820	1,150,949	602,549	[1]	7
August	140,988	75,197	1,291,937	677,746	[1]	3
September	160,012	88,461	1,451,949	766,207	[1]	6
October	170,855	94,249	1,622,804	860,456	[1]	6
November	115,167	59,111	1,737,971	919,567	44	6
December	108,053	51,128	1,846,024	970,695	44	4
January 1950	65,004	36,088	1,911,028	1,006,783	49	0
February	83,946	46,245	1,994,974	1,053,028	49	0
March	110,100	55,689	2,105,074	1,108,717	47	0
April	104,115	57,920	2,209,189	1,166,637	45	0
May	79,379	41,820	2,288,568	1,208,457	45	0
June	110,175	54,307	2,398,743	1,262,764	45	0
July	126,943	63,288	2,525,686	1,326,052	45	0
August	133,846	63,957	2,659,532	1,390,009	45	0
September	83,923	42,354	2,743,455	1,432,363	42	0
October	113,889	54,775	2,857,344	1,487,138	28	0
November	97,928	46,770	2,955,272	1,533,908	34	0
December	54,966	20,954	3,010,238	1,554,862	[1]	0
Total ...	3,010,238	1,554,862	—	—	—	—

[1]) Not available.

ALGERIA

BACKGROUND

BCG vaccination has been in use in Algeria since 1926. The Pasteur Institute of Algeria (the first Director of which was Professor Calmette) carried out vaccinations in the rural areas as well as in the city of Algiers.

The agreement between the ITC and the Secretary-General of the French Ministry of Foreign Affairs on behalf of the Government of Algeria was signed on July 12, 1949.

The programme was a mass campaign to cover children and young adults up to 21 years of age.

The campaign was originally scheduled to last two years. By special arrangement with ITC and UNICEF the campaign has been extended and it is expected that it will be completed by the end of April 1952, i.e. $2^1/_2$ years in all.

The Government Liaison Officer for the campaign is Dr. Marguerite, Supervisor of the Public Health Services of the Government of Algeria.

PROGRESS OF THE CAMPAIGN

The campaign began in November 1949 in the territories of the South: Touggourt and El Oued, Ouargla and Ghardaia. The teams were concentrated in one area at a time and the work proceeded progressively from South to North, covering the territories of Tiaret in the department of Oran; Biskra and Bou-Saada in the department of Algiers; Batna and Setif in the department of Constantine. From March 1950, the towns of the three departments as well as the rural areas were covered, and during the Summer, the teams worked particularly in the Kabylie mountains. Since January 1951, the campaign has been in progress in the big cities of Oran, Algiers, Constantine and their environs.

The programme was originally conducted by six teams, three national and three international, each consisting of one doctor and four nurses. The difficult conditions of work, particularly in the mountainous Kabylie area, made it necessary, after mid-1950, to utilize a supplementary team of two international-staff nurses to relieve the personnel of the regular teams.

At the height of the campaign there were 15 national vaccinators and 18 international vaccinators at work.

A total of 1,670,665 persons were tested and 675,664 were vaccinated as of June 30, 1951. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

In the beginning of the programme, the Moro patch test was used for children under 6 years of age and Mantoux 10 T.U. for persons above that age. The Moro patch test was soon abandoned because it was unreliable in the tropical conditions of the country, and only the Mantoux test was used for all ages — in general 5 T.U. for children below 6, and 10 T.U. above that age. Vaccine and tuberculin for the campaign in Algeria are provided by the ITC from the Pasteur Institute, Paris.

CONTINUATION

The Ministry of Public Health of Algeria plans to continue tuberculin testing and BCG vaccination as part of the tuberculosis control programme, which is being expanded.

It is intended that the vehicles and medical equipment employed during the ITC phase should be left in the country afterwards for the continuing programme, in accordance with usual ITC and UNICEF procedures.

It is expected that, after conclusion of the ITC phase, tuberculin and vaccine for the continuing programme will be provided by the Pasteur Institute, Paris.

ALGERIA

BACKGROUND

BCG vaccination has been in use in Algeria since 1926. The Pasteur Institute of Algeria (the first Director of which was Professor Calmette) carried out vaccinations in the rural areas as well as in the city of Algiers.

The agreement between the ITC and the Secretary-General of the French Ministry of Foreign Affairs on behalf of the Government of Algeria was signed on July 12, 1949.

The programme was a mass campaign to cover children and young adults up to 21 years of age.

The campaign was originally scheduled to last two years. By special arrangement with ITC and UNICEF the campaign has been extended and it is expected that it will be completed by the end of April 1952, i.e. $2^1/_2$ years in all.

The Government Liaison Officer for the campaign is Dr. Marguerite, Supervisor of the Public Health Services of the Government of Algeria.

PROGRESS OF THE CAMPAIGN

The campaign began in November 1949 in the territories of the South: Touggourt and El Oued, Ouargla and Ghardaia. The teams were concentrated in one area at a time and the work proceeded progressively from South to North, covering the territories of Tiaret in the department of Oran; Biskra and Bou-Saada in the department of Algiers; Batna and Setif in the department of Constantine. From March 1950, the towns of the three departments as well as the rural areas were covered, and during the Summer, the teams worked particularly in the Kabylie mountains. Since January 1951, the campaign has been in progress in the big cities of Oran, Algiers, Constantine and their environs.

The programme was originally conducted by six teams, three national and three international, each consisting of one doctor and four nurses. The difficult conditions of work, particularly in the mountainous Kabylie area, made it necessary, after mid-1950, to utilize a supplementary team of two international-staff nurses to relieve the personnel of the regular teams.

At the height of the campaign there were 15 national vaccinators and 18 international vaccinators at work.

A total of 1,670,665 persons were tested and 675,664 were vaccinated as of June 30, 1951. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

In the beginning of the programme, the Moro patch test was used for children under 6 years of age and Mantoux 10 T.U. for persons above that age. The Moro patch test was soon abandoned because it was unreliable in the tropical conditions of the country, and only the Mantoux test was used for all ages — in general 5 T.U. for children below 6, and 10 T.U. above that age. Vaccine and tuberculin for the campaign in Algeria are provided by the ITC from the Pasteur Institute, Paris.

CONTINUATION

The Ministry of Public Health of Algeria plans to continue tuberculin testing and BCG vaccination as part of the tuberculosis control programme, which is being expanded.

It is intended that the vehicles and medical equipment employed during the ITC phase should be left in the country afterwards for the continuing programme, in accordance with usual ITC and UNICEF procedures.

It is expected that, after conclusion of the ITC phase, tuberculin and vaccine for the continuing programme will be provided by the Pasteur Institute, Paris.

ALGERIA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN NOVEMBER 1949—JUNE 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
November 1949	94,069	31,654	94,069	31,654	0	15
December					0	15
January 1950					5	15
February					5	15
March	312,325	109,888	406,394	141,542	5	15
April					10	15
May	139,337	43,755	545,731	185,297	15	15
June	45,907	15,751	591,638	201,048	15	11
July	57,699	25,438	649,337	226,486	15	16
August	158,118	76,847	807,455	303,333	15	17
September	112,862	49,850	920,317	353,183	15	17
October	130,915	66,478	1,051,232	419,661	15	17
November	135,405	71,247	1,186,637	490,908	15	17
December	95,325	37,506	1,281,962	528,414	15	18
January 1951	68,501	20,370	1,350,463	548,784	15	16
February	65,773	21,805	1,416,236	570,589	15	16
March	48,635	16,953	1,464,871	587,542	15	16
April	114,634	51,037	1,579,505	638,579	15	17
May	91,160	37,085	1,670,665	675,664	15	17
June[1])	[1])	[1])	1,670,665	675,664	—	—
Total...	1,670,665	675,664	—	—	—	—

[1]) No work performed during the month.

MOROCCO

BACKGROUND

BCG vaccination has been in use in Morocco since 1932 when a BCG service was organized in the Pasteur Institute of Casablanca.

The agreement between ITC and the Secretary-General of the French Ministry of Foreign Affairs representing the Government of Morocco was signed on March 5, 1949.

The programme was a mass vaccination campaign for age-groups from 1—21 years.

The ITC Mission arrived in April 1949 and work began that month. The campaign was completed at the beginning of May 1951, i.e. in two years.

The Government Liaison Officer for the campaign was Dr. Jean Gaud, Director of the Hygiene Institute, Rabat.

PROGRESS OF THE CAMPAIGN

The campaign began in mid-April 1949 in the Agadir region. Operations were soon extended to the larger cities and principal towns in addition to all rural areas where there were important concentrations of population. By June 15, 1950, three-quarters of the programme had been completed. The teams had worked in the cities and environs of Agadir, Safi, Marrakech, Mogador, Mazagan, Azemour, Casablanca, Rabat, Salé, Port-Lyautey. From early 1951 until the end of the campaign, the work was conducted principally in the Tafilalet and Ouarzazate regions, the mining centre of Oudja and the schools of Meknes and Fes. In general, the cities and surroundings were taken first, and the rural areas in a second stage.

At the height of the campaign, 20 national and 20 international vaccinators were at work, normally functioning in eight teams of five vaccinators each.

The ITC phase of the programme was completed on May 5, 1951. A total of 2,207,507 persons were tested and 1,009,589 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

At the beginning of the programme, the Moro patch test was used for children up to 12 years and Mantoux 1 T.U. and 10 T.U. for persons above that age. After extensive trials, the technique was modified beginning in September 1949: Moro patch test for children up to 6 years of age (in Summer, only up to 3 years), Mantoux 10 T.U. for the older age-groups.

Vaccine and tuberculin for the campaign in Morocco were provided by ITC from the Pasteur Institute, Paris.

CONTINUATION

The Public Health Service of Morocco is continuing tuberculin testing and BCG vaccination as part of the tuberculosis control programme. A plan has been formulated whereby it is expected that 350,000 will be tested and about half that number vaccinated each year. The Hygiene Institute of Rabat has created a BCG Service in its Anti-Tuberculosis Department to direct the programme.

Testing and vaccination will be conducted at regular health centres assisted by mobile teams assigned by the Hygiene Institute.

Vehicles and equipment utilized during the ITC phase have been left in the country for the continued programme. Tuberculin will be provided by the Pasteur Institute, Paris, and vaccine by the Pasteur Institute, Casablanca.

MOROCCO

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN APRIL 1949—APRIL 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
April 1949 to February 1950	962,876	467,556	962,876	467,556	15[1])	20[1])
March	143,800	54,126	1,106,676	521,682	20	20
April	68,441	22,954	1,175,117	544,636	20	20
May	65,598	19,782	1,240,715	564,418	15	10
June	20,664	5,798	1,261,379	570,216	15	10
July [2])	—	—	1,261,379	570,216	—	—
August	35,708	15,593	1,297,087	585,809	5	10
September	24,358	12,719	1,321,445	598,528	5	10
October	120,426	48,492	1,441,871	647,020	20	20
November	130,374	52,622	1,572,245	699,642	20	20
December	116,002	50,482	1,688,247	750,124	20	20
January 1951	185,512	85,703	1,873,759	835,827	20	20
February	131,169	65,325	2,004,928	901,152	20	20
March	115,901	59,839	2,120,829	960,991	20	20
April	86,678	48,589	2,207,507	1,009,589	10	10
Total...	2,207,507	1,009,589	—	—	—	—

[1]) During most of the period.
[2]) No work performed during the month.

NORTH AFRICA

(Upper Left) ALGERIA: Tuberculin-testing a young girl of the village of Cerez.

(Upper Right) MOROCCO: A French team at work.

TUNISIA: French Dr. Gauthier, ITC Chief in Tunisia, supervises the work of a team at La Rocba.

TUNISIA: The ITC reaches the nomad tribes near Guetouffa.

MIDDLE EAST

← ISRAEL: Israeli nurse Moro-testing children of Tel-Aviv.

EGYPT: A Norwegian team at work in the village of Beltag.

SYRIA: An Arab father brings his children for vaccination by Swedish Dr. Mats Börjesson in Damascus.

PALESTINE REFUGEES IN LEBANON: A refugee camp near Hebron.

TUNISIA

BACKGROUND

BCG vaccination was in use before World War II in Tunisia, under the direction of the Pasteur Institute, Tunis, but was interrupted by the war.

The agreement between the ITC and the Secretary-General of the French Ministry of Foreign Affairs representing the Government of Tunisia was signed on May 31, 1949.

The campaign began in the Autumn of 1949, and was a mass campaign for age-groups 1—19 years. The programme was scheduled to last eighteen months and was concluded within that period of time, ending on April 15, 1951.

The Government Liaison Officer for the campaign was Dr. Goujou, of the Tuberculosis Department of the Ministry of Health, Tunisia.

PROGRESS OF THE CAMPAIGN

The four teams were usually concentrated in one area at a time and the work proceeded progressively, from the extreme South to the North. The military territories, the territories under civilian control, the cities and the rural areas were included. The itinerary of the teams during the first part of 1950 was as follows: Gabès, Tozeur, Gafsa, Sfax, Kasserine, Maktar. Afterwards they worked in the regions of Souk el Arba, Teboursouk, Sousse, Medjez el Bab, Zagouan, and finally reached Tunis, Bizerte and environs, where the campaign was conducted from the beginning of 1951 until the completion of the ITC phase.

At peak there were 10 national and 11 international vaccinators at work.

A total of 601,502 persons were tested and 265,683 were vaccinated. (For month-by-month breakdown, see Table 1). About one-fifth of the total population was covered.

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

In the beginning, the Moro patch test was used for children up to 12 years and Mantoux 10 T.U. for persons above that age. Later the Moro patch test was used only for children up to 6 years of age (in Summer, only up to 3 years); Mantoux 10 T.U. for the older age-groups.

Vaccine and tuberculin for the campaign in Tunisia were provided by the ITC from the Pasteur Institute, Paris.

CONTINUATION

The Public Health Service of the Government of Tunisia is continuing tuberculin testing and BCG vaccination as a permanent part of its tuberculosis control programme. Provision has already been made for the programme in the health budget until the end of March 1952. The programme will concentrate upon children not included during the ITC phase and will provide for retesting of those who were covered.

The vehicles and medical equipment employed during the ITC phase were left in the country for the continuing programme.

Tuberculin is being provided by the Pasteur Institute, Paris, and vaccine is to be provided by the Pasteur Institute, Tunis.

TUNISIA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN SEPTEMBER 1949—APRIL 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
September 1949-February 1950	123,587	58,872	123,587	58,872	5[1])	10[1])
March	41,864	17,500	165,451	76,372	10	10
April	32,588	14,818	198,039	91,190	10	10
May	35,813	15,223	233,852	106,413	10	10
June	40,797	17,344	274,649	123,757	10	11
September	26,902	14,645	301,551	138,402	9	11
October	71,642	37,235	373,193	175,637	9	11
November	48,599	22,107	421,792	197,744	9	11
December	34,943	17,267	456,735	215,011	9	11
January 1951	48,790	22,671	505,525	237,682	9	11
February	27,629	9,635	533,154	247,317	8	10
March	48,734	11,668	581,888	258,985	7	10
April	19,614	6,698	601,502	265,683	6	10
Total...	601,502	265,683	—	—	—	—

[1]) During most of the period.

EGYPT

BACKGROUND

The agreement between the Government of Egypt and the ITC was signed on May 2, 1949. The ITC Mission arrived in November.

The work was originally planned as a short-term demonstration campaign for one year, but as the work developed, it became substantially an over-all programme. The work was conducted in both the towns and rural areas and concentrated on the age-groups between 1 and 25, although there was no fixed upper limit.

The Government Liaison Officer for the campaign was Dr. Ismail El-Lamie, of the Chest Section of the Ministry of Health.

PROGRESS OF THE CAMPAIGN

Work was begun in December 1949, with school children in Cairo. There were early difficulties because of the use of a positive consent form (later abandoned) and because of counter-propaganda. It was decided, therefore, to shift the focus of the campaign to the rural areas in the South and to work northwards. In the course of the rest of the campaign, the southern provinces of Aswan and Qena were almost entirely covered and in the Delta area, the provinces of Minufiya, Gharbiya, Daqahliya, and Qalyubiya were covered completely.

The original programme of one year was extended to 20 months in all, until the termination of ITC. Work is continuing with the assistance of UNICEF/WHO.

The greatest number of national vaccinators at work in one month was 32; the greatest number of international vaccinators was 19.

In all 2,104,311 persons were tested and 661,128 were vaccinated during the ITC phase. (For month-by-month figures, see Table 1.)

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

Originally, the tuberculin testing method was: Moro patch test for children up to 12 years of age and Mantoux 10 T.U. for persons over 12. This was subsequently changed, in September 1950, to the use of a single Mantoux test of 5 T.U. for persons over 12 only.

The tuberculin dilutions ready for use were provided by ITC from the State Serum Institute, Copenhagen, until June 1950; after that date dilutions were made at the Agouza Serum and Vaccine Institute, Cairo, from stock solution of PPD sent from Copenhagen. Tuberculin jelly and vaccine were provided for the entire campaign by ITC from the Danish State Serum Institute.

CONTINUATION

The Government plans to continue BCG vaccination in Egypt until the entire country has been covered. The vehicles and medical equipment utilized during the ITC phase of the campaign have been transferred to UNICEF which, with WHO, has taken over responsibility for continued international assistance. ITC has arranged for the provision of tuberculin stock solution and tuberculin jelly until the end of June 1954.

A BCG production laboratory has been set up with ITC assistance at the Agouza Serum and Vaccine Institute. A Danish technician was assigned to Egypt by ITC for five months during 1951, to assist in establishing vaccine production procedures and in training local personnel. Production of vaccine began in May 1951, for a preliminary guinea-pig testing period of three months. Preparations are being made for inspection of the laboratory by the WHO Biological Standardization Committee.

RETESTING

A retesting programme under joint ITC and WHO.TRO auspices was carried out in the Spring of 1950, by trained special teams. Some 11,000 persons were retested in Aswan, Idfu, Asyut, Tanta, Mansoura, and Cairo. For results, see Chapter IV-B.

EGYPT

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN DECEMBER 1949—JUNE 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
December 1949	7,771	1,061	7,771	1,061	12	6
January 1950	8,810	1,006	16,581	2,067	12	6
February	22,992	6,530	39,573	8,597	12	6
March	38,049	11,162	77,622	19,759	21	8
April	50,199	17,839	127,821	37,598	24	8
May	98,655	31,024	226,476	68,622	24	8
June	71,023	13,507	297,499	82,129	24	8
July	77,445	17,004	374,944	99,133	24	8
August	134,749	29,076	509,693	128,209	25	13
September	103,314	22,691	613,007	150,900	23	11
October	127,634	32,852	740,641	183,752	24	19
November	151,333	56,836	891,974	240,588	25	19
December	120,780	43,517	1,012,754	284,105	27	14
January 1951	142,711	52,378	1,155,465	336,483	29	15
February	130,375	45,821	1,285,840	382,304	29	16
March	214,990	70,937	1,500,830	453,241	32	18
April	221,750	82,973	1,722,580	536,214	28	17
May	213,189	73,858	1,935,769	610.072	32	16
June	168,542	51,056	2,104,311	661,128	31	13
Total...	2,104,311	661,128	—	—	—	—

ISRAEL

BACKGROUND

The agreement between the Government of Israel and the ITC was signed on September 20, 1949. The programme was a country-wide mass campaign for age-groups up to 30 years in general, but no fixed upper limit was set. The ITC phase was scheduled to last about six months.

The ITC Mission arrived in Israel in October 1949, and work began in November. The Mission was withdrawn at the end of July 1950, after which date the work was carried on by national vaccinators only, the UNICEF Chief of Mission in Israel serving as Liaison Officer for ITC during the remaining period. The ITC phase of the mass campaign officially terminated at the end of November 1950. The Liaison Officer for the Government of Israel was Dr. B. Pinkenson.

PROGRESS OF THE CAMPAIGN

The campaign began in the schools and among the general public of Tel-Aviv, Haifa and Jerusalem. Permanent centres were set up in the larger cities before the teams left the areas. Beginning in February all the vaccinators were assembled for an intensified campaign in the immigrant camps, which lasted until early April. After Easter, work was resumed in Tel-Aviv, Jerusalem and the Nathania-Hedera districts, and subsequently in the areas surrounding Tel-Aviv, Eastern Galilee and Nazareth. In August work began in Northern Galilee and in the environs of Haifa. The Jewish population of Negev was covered in August, and the Bedouin tribes of that area in September-October. During October and November, work proceeded in the Jerusalem district and in villages near Affula, Rishon-le-Zion, Tiberias and Haifa.

At the height of the campaign there were 15 national and 2 international vaccinators at work.

A total of 365,298 persons were tested, and 208,851 vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

In the beginning, tuberculin testing techniques were as follows: age-groups 1—6, Moro patch test only; 7—12, Moro patch and Mantoux 10 T.U.; 13 and over, Mantoux 1 T.U. and 10 T.U. After trial in the immigrant camps, a single technique was used: 10 T.U. up to 10 years and 5 T.U. from 11 years and over.

Tuberculin and vaccine for the campaign in Israel were provided by the ITC from the State Serum Institute, Copenhagen.

CONTINUATION

The Government of Israel has instituted tuberculin testing and BCG vaccination as a permanent part of the public health service. The plan of the Government was to base this work in newly organized district dispensaries, and to employ 5 mobile teams. It was estimated that about 200,000 persons would be tested annually.

ITC has provided vehicles, medical equipment, and loudspeaker units for the continuing work. Arrangements have been made by ITC to provide Israel with tuberculin stock solution for a three-year period ending November 1953.

As of July 1, 1951, construction of a BCG laboratory in Jaffa was underway, and it was expected that it would be completed by the end of the year. Complete equipment and chemicals for the laboratory were provided during the summer of 1951 by ITC, which also made arrangements to train an Israeli bacteriologist in BCG production in Scandinavian and French BCG laboratories. It is expected that production of vaccine will begin at the end of 1951.

ISRAEL

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN NOVEMBER 1949—NOVEMBER 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
November 1949	28,627	20,369	28,627	20,369	8	2
December	30,846	17,598	59,473	37,967	9	2
January 1950	49,447	32,384	108,920	70,351	9	2
February	19,487	12,276	128,407	82,627	9	2
March	38,892	15,255	167,299	97,882	9	2
April	25,453	13,003	192,752	110,885	11	2
May	53,790	32,153	246,542	143,038	15	2
June	50,279	33,734	296,821	176,772	9	2
July	20,298	11,023	317,119	187,795	7	0
August	18,850	9,445	335,969	197,240	7	0
September	6,121	2,197	342,090	199,437	5	0
October	11,435	5,707	353,525	205,144	5	0
November	11,773	3,707	365,298	208,851	5	0
Total...	365,298	208,851	—	—	—	—

LEBANON

BACKGROUND

The agreement between the Government of Lebanon and the ITC was signed on March 17, 1949. The ITC Mission arrived in October 1949.

The campaign was demonstration in nature and was planned to last for six months, covering the school and general population in the city of Beirut and suburbs. No upper limit was fixed, but work was concentrated on persons up to 20 years of age.

PROGRESS OF THE CAMPAIGN

Work was begun in the Government schools in October 1949 and proceeded without difficulty and with high attendances. In the private schools, however, progress was much slower because of the opposition of some of the physicians. Attendance at the public centres was also poor as a result of the inadequacy of the educational and publicity work.

Because of inadequate Government support in recruiting national technical personnel, in organizing the work, and in educating the public, further demonstration work in Lebanon was considered inadvisable by ITC.HQ and the programme was terminated on March 15, 1950.

At peak there were 10 national and 4 international vaccinators at work.

In all, 43,363 persons were tuberculin tested and 28,311 vaccinated. (For month-by-month figures, see Table 1.)

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

The tuberculin testing method was Moro patch test for children up to 12 years of age; Mantoux 1 T.U. and 10 T.U. for persons over 12 years.

Tuberculin jelly, tuberculin dilutions ready for use, and BCG vaccine were provided by ITC from the State Serum Institute, Copenhagen.

CONTINUATION

At the time of the termination of the ITC work in Lebanon, the intention of the Ministry of Health was to conduct BCG vaccination at tuberculosis dispensaries to be established at various points in the country, but not to conduct a mass vaccination campaign.

LEBANON

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN OCTOBER 1949—MARCH 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
October 1949	775	270	775	270	4	2
November	15,064	12,533	15,839	12,803	4	2
December	7,061	4,691	22,900	17,494	4	2
January 1950	14,573	7,889	37,473	25,383	10	2
February	5,444	2,567	42,917	27,950	10	4
March	546	361	43,463	28,311	2	4
Total	43,463	28,311	—	—	—	—

SYRIA

BACKGROUND

The agreement between the Government of Syria and the ITC was signed on December 17, 1949. The ITC Mission arrived in February 1950, and work began in March.

The programme in Syria was a six-month demonstration programme for the country as a whole, but an over-all campaign in Damascus, Aleppo, and a few of the larger towns. The age limit was not fixed at 18, but included persons up to 25 and 30.

The Government Liaison Officer was Dr. El Khayat.

PROGRESS OF THE CAMPAIGN

Work began on March 1, 1950, in the schools of Damascus. At the beginning of April, one of the international teams began work in Aleppo, together with two local teams. The campaign in Damascus was completed at the end of June, and in Aleppo during July. Thereafter work was conducted in Latakia, Homs, Hama, and in selected small towns and rural areas of the South. The ITC phase was completed as scheduled at the end of August 1950.

At peak there were 13 national and 6 international vaccinators at work.

In all, 265,285 persons were tuberculin tested, and 115,582 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

After preliminary trials with a two-test method, a single tuberculin testing technique was decided upon: Moro patch test for children up to 12 years, and Mantoux 5 T.U. for persons over 12.

Tuberculin dilutions ready for use, tuberculin jelly and BCG vaccine were provided by ITC from the State Serum Institute, Copenhagen.

CONTINUATION

The Government is continuing tuberculin testing and BCG vaccination in Syria, and plans to cover the entire country. A permanent centre has been established at Damascus and 7 mobile teams have been working in Damascus and environs, as well as Aleppo, Gezireh, and Horan. Other permanent centres are planned. Between October 1950 and May 1951, about 109,000 persons were tested and 55,000 were vaccinated in the Government's post-ITC programme.

ITC's medical equipment, vehicles, loudspeakers, and educational materials were left in the country. ITC has made arrangements to supply Syria with tuberculin stock solution and with tuberculin jelly until September 1, 1953. ITC has also provided equipment and chemicals for the preparation of tuberculin dilutions in Damascus.

BCG freeze-dried vaccine from the Pasteur Institute in Paris has been employed for vaccination since the conclusion of the ITC phase of the programme.

RETESTING

A retesting programme under joint ITC and WHO.TRO auspices was carried out in the Autumn of 1950, by trained special teams. Nearly 6,000 persons were retested in Damascus and Aleppo. For results, see Chapter IV-B.

SYRIA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN MARCH 1950—AUGUST 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
March 1950	16,897	9,415	16,897	9,415	4	6
April	35,843	22,441	52,740	31,856	13	6
May	58,763	29,338	111,503	61,194	13	6
June	55,173	14,192	166,676	75,386	11	6
July	39,628	15,329	206,304	90,715	7	6
August	58,981	24,867	265,285	115,582	5	6
Total...	265,285	115,582	—	—	—	—

PALESTINE REFUGEES

BACKGROUND

In the Spring of 1949, UNICEF undertook to finance the costs of an ITC campaign among Arab refugees from Palestine. Details of the programme were worked out between ITC representatives, and officials of United Nations Relief for Palestine Refugees and cooperating organizations.

The intent was to cover persons up to 18 years of age both among the refugees in camps and in the larger cities, but not in the rural areas.

PROGRESS OF THE CAMPAIGN

Five ITC teams were assigned and started work in September 1949 among the refugees in the Gaza area, Lebanon, and Northern Palestine. In early October the work was finished in Lebanon and began in Syria; the camps in Syria were finished at the end of October, and work began in Transjordan and in the Jordan camps. The entire programme was completed on December 21, except for retesting work in Gaza and Syria which continued until February.

The programme was executed by an ITC international staff of 25 vaccinators.

A total of 211,323 persons were tested and 148,137 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

The Moro patch test was used for children up to 12, and for persons over 12, Mantoux 1 T.U. and 10 T.U.

Tuberculin dilutions ready for use, tuberculin jelly, and vaccine were provided by ITC from the State Serum Institute, Copenhagen.

PALESTINE REFUGEES

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN OCTOBER 1949—DECEMBER 1949

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
October 1949	71,201	49,841	71,201	49,841	0	25
November / December	140,122	98,296	211,323	148,137	0	24
Total	211,323	148,137	—	—	—	—

CEYLON

BACKGROUND

The agreement between the Government of Ceylon and ITC was signed on February 2, 1949, and the ITC Mission arrived in mid-March.

The original plan was for a demonstration programme of three months, after which the work would be continued by national personnel only. Children from 1—18 were to be included.

The Government Liaison Officers for the programme were Dr. G. E. Ranawake, Supt., Tuberculosis Section, Ministry of Health, and Dr. H. M. Vanderwall, BCG Officer, Ministry of Health.

PROGRESS OF THE CAMPAIGN

Work commenced in March 1949 among hospital and factory personnel, and was extended to the schools when they reopened in May. There was strong opposition among some members of the medical profession, who waged active counter-propaganda which finally extended to the newspapers. This opposition, plus the fact that the health authorities required a positive consent form from parents for tuberculin testing and vaccination, resulted in a very low attendance among the school children. It was thereupon decided to extend the demonstration period for another three months. The ITC international staff concentrated its efforts on training national vaccinators until departure of the ITC Mission in September 1949. During the remainder of 1949, and during 1950, national teams continued work under an arrangement whereby ITC continued to provide assistance with supplies and equipment.

There were still difficulties in organizing a large-scale campaign and in securing a satisfactory public response. In the Spring of 1950, the Ministry of Health requested ITC to send another international team to Ceylon. ITC informed the Government that it was prepared to render this assistance if the Government intended to intensify BCG work to conduct a broad-scale mass vaccination programme and if an effective plan to that end were formulated. After further negotiations between the Ministry of Health and ITC, a plan for a mass campaign was developed and ITC agreed to send a team for a six-month period beginning January 1, 1951.

The ITC team arrived in late December 1950. Four teams, each composed of national and international personnel, began work in late January. A mass campaign was undertaken in the densely populated villages of the Western Province, and the city of Colombo. During the six-month period ending June 30, 1951, the mass campaign yielded excellent results in the schools, although in the general population outside the schools, it was less satisfactory.

At the height of the campaign, there were 16 national and 4 international vaccinators at work.

During the second demonstration period, January to June 1951, nearly 200,000 persons were tested, and about 95,000 were vaccinated. During the entire programme, a total of 306,707 were tested, and 122,764 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

During the first demonstration programme in Ceylon, the standard method of tuberculin testing was the Mantoux test with successive doses of 1 T.U. and 10 T.U. The Moro patch test was used only in the youngest age-groups. During the mass campaign in the first six months

of 1951, a single test was used for all age-groups, i. e. Mantoux 5 T.U.

Tuberculin dilutions and vaccine were provided by the Government of India BCG Laboratory at the King Institute, Madras.

CONTINUATION

The mass campaign is being continued in Ceylon by the Ministry of Health. The plan of the Ministry provides for eight mobile teams. Because of the shortage of fully trained medical personnel, each team is to consist of a doctor, a nurse and three "BCG technicians" (sanitary inspectors). The Ministry plans to cover the entire island systematically.

Vehicles and medical equipment for the continuing programme were left in the country by ITC. As in the case of other countries, arrangements were made by ITC to provide tuberculin for a three-year period after the conclusion of the ITC phase.

Vaccine will be procured by the Government from the laboratory in Madras, India.

CEYLON

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN MARCH 1949—JUNE 1951

Based on Monthly Reports (C- Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
March 1949	2,053	64	2,053	64		2
April	3,790	204	5,843	268		2
May	8,064	518	13,907	786		2
June	783	146	14,690	932		2
July	3,058	1,384	17,748	2,316		2
August	4,456	704	22,204	3,020	[1]	2
September	4,256	354	26,460	3,374		0
October	1,556	67	28,016	3,441		0
November	2,311	872	30,327	4,313		0
December	1,139	215	31,466	4,528		0
Jan.-Dec. 1950	79,250	24,148	110,716	28,676		0
January 1951	19,998	10,091	130,714	38,767	15	4
February	39,604	21,218	170,318	59,985	15	4
March	38,900	19,166	209,218	79,151	15	4
April	31,488	14,002	240,706	93,153	16	4
May	24,134	10,074	264,840	103,227	16	4
June	41,867	19,537	306,707	122,764	16	4
Total	306,707	122,764	—	—	—	—

[1]) Not available.

INDIA

BACKGROUND

In 1948, the Government of India established a BCG laboratory at the King Institute of Preventive Medicine, Guindy, Madras. Assistance in training bacteriologists and beginning the production of vaccine was given by WHO. In August 1948, the first BCG vaccinations in India were given under the auspices of the Government and WHO.

The agreement between the Government of India and the ITC was signed on November 25, 1948. The ITC teams arrived in February 1949, and work began shortly afterwards.

The programme was originally intended to be a six-month demonstration campaign, primarily among school groups, during which six international teams would train national personnel for a period of three months in each of the larger States. This was subsequently extended at the request of the Government of India and ITC aid continued until June 30, 1951. Beginning in the Spring of 1950 the international personnel were reduced to three teams.

The Government Liaison Officer for the programme was Dr. P. V. Benjamin, Tuberculosis Adviser to the Government.

PROGRESS OF THE CAMPAIGN

During the two-year period from February 1949 until 1951 the ITC teams conducted demonstrations in virtually all of the larger States of India, working primarily in the larger cities and towns. Testing and vaccination were conducted among school groups, and a considerable number of national personnel were trained in the techniques of testing and vaccination.

Interest of the local health authorities varied; some States set up their own BCG vaccination teams upon conclusion of the demonstration; in other areas, however, there was no continuation. By and large, there was no substantial opposition to BCG vaccination, except in Madras where an active counter-propaganda was waged by certain groups. The difficulties in the way of extending the programme varied from State to State. Almost everywhere there was a shortage of doctors and nurses; some States had no funds for a broad-scale BCG programme; other States conducted inadequate public information programmes and the public response was poor.

The numbers tested and vaccinated per national team during the period until early 1951 were small; few teams tested more than 2,000 to 3,000 persons per month. The work was not extended outside the larger cities and was confined almost entirely to school children. In a few cities, efforts had been made to set up public vaccination centres in connection with tuberculosis dispensaries, but these centres did not exceed one or two per city. The attendance at these public centres was good during the first days of their existence but gradually dropped, frequently to less than 100 persons tested per day. In some cities, national teams had shifted the basis of work to a house-to-house campaign in which very few persons were reached.

Only in one area was an actual mass campaign undertaken, in the plantations of the Indian Tea Association in Assam and West Bengal, under the sponsorship of the Ross Institute of Tropical Hygiene. In this campaign 780,205 persons were tested by ten national vaccinators in the period from early 1950 to June 30, 1951.

By the end of 1950, about 2,500,000 persons had been tuberculin tested and about 800,000 had been vaccinated in all India.

It had been clear to ITC for some time that the primary obstacle to extension of the programme in India to an over-all mass campaign was the problem of personnel. Because of the shortage of doctors and nurses they were frequently able to work only a few hours per day, since they were busy with private practice and

other commitments. This also prevented work outside the larger cities. Where it was possible to recruit doctors and nurses for full-time duty, they were frequently personnel who were unable to secure any other positions and were therefore not of the highest competence. In other cases, the State compelled doctors and nurses of its health service to work with BCG teams for certain periods and such personnel were not very interested in the work.

It became clear that a mass vaccination programme in India could be undertaken only if para-medical and non-medical personnel were utilized as vaccinators. Trials were made in training and utilizing such personnel, with satisfactory results. Although the health authorities in a number of States at first objected to the use of non-medical vaccinators, the experiences elsewhere and the recommendations of ITC ultimately persuaded them to try with such personnel. By early 1951, about half of all the national vaccinators at work in India were such lay vaccinators, termed "BCG technicians".

The Director of ITC reviewed the status of BCG work in India at the beginning of 1951. It was his opinion that ITC had delayed too long in starting a broad-scale vaccination programme in that country. BCG vaccination had been accepted by the medical profession and the public; trained personnel were available in some areas; there was a reliable source of tuberculin and vaccine. Only a plan of action for an effective mass campaign was lacking. A mass vaccination campaign in selected areas in India might well have been undertaken in the early part or middle of 1950.

After consultation between the health authorities of the Central Government and ITC, it was decided to make a trial of a real mass vaccination campaign in one large city and in one rural area. The areas selected were the city of Meerut in the State of Uttar Pradesh and the rural district of Ambala in the State of Punjab. Mass campaigns were conducted along the usual ITC lines, for the age-groups from 1—20 years. The teams proceeded from sector to sector in the areas, spending only a few days in each sector, covering school children first and the non-school population immediately afterwards.

The mass campaign in the city of Meerut ran from March 3 to April 21, 1951, during which period 43,330 persons were tested and 9,780 were vaccinated by a national team of one doctor and two nurses, assisted by an ITC team of one doctor and two nurses. In the Ambala rural area, the campaign was conducted from mid-March until mid-June 1951; a total of 63,239 were tested and 25,960 were vaccinated by a national team of one doctor and six technicians assisted by an ITC team of one doctor and one nurse. In this rural campaign, 284 villages with a total population of 120,000 were covered.

Early in May 1951, another mass campaign was undertaken in the State of Madhya Bharat in the city of Gwalior and in the rural areas of the Indore administrative district. In the city of Gwalior, 62,485 persons were tested and 11,489 were vaccinated by a national team of one doctor and six technicians assisted by an ITC doctor, during the period May 10 to June 30, 1951. In the Indore district, about 100 villages comprising a total population of some 50,000 inhabitants were covered.

The result of the trial campaigns in each of the three States was a decision to conduct an over-all campaign throughout the States; plans were worked out to complete the programme in three years in Punjab and Madhya Bharat, and in five years in Uttar Pradesh.

During the final four months of ITC's assistance to India, ending June 30, 1951, all ITC personnel in the country were utilized in assisting the above-described mass campaigns. Demonstration work previously organized by the ITC Mission in other parts of India was continued, completely under national direction.

It is the considered opinion of ITC, of the Ministry of Health of India, and of the health authorities of the three States in which the trial mass campaigns were conducted, that similar mass campaigns, both in urban and in rural areas, are quite feasible in India. Continued international assistance, assumed by UNICEF and WHO upon the termination of ITC's work on June 30, 1951, was to be directed to this end. The international medical personnel assigned to India for the UNICEF/WHO programme were to assist in the work in the three States where mass campaigns were underway; the plan was for similar campaigns to be undertaken in other States.

During the ITC phase of the BCG programme in India, a total of 4,068,515 were tested and 1,351,546 were vaccinated. (For month-by-month breakdown, see Table 1.)

During the period of ITC assistance to India, national personnel at work in tuberculin testing and BCG vaccination were reported to ITC in terms of number of teams; the make-up of these teams varied considerably, from three to six vaccinators per team. While it is not possible to report a precise figure on the number of vaccinators at work in India, it is clear that there have been as many as 300 vaccinators at one time. At the height of ITC's assistance, there were 18 international vaccinators at work.

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

Because India was the first tropical country in which ITC undertook to assist a BCG campaign, it was deemed wise to determine tuberculin testing technique only after extensive trials. Therefore, early testing was done with successive Mantoux test doses of 1 T.U., 10 T.U. and 100 T.U. Comparative studies were made with the Moro patch and Mantoux test. Additional studies were made by a special retesting team of WHO.TRO in the Spring of 1951. Beginning July 1, 1950, a single pre-vaccination test of Mantoux 5 T.U. was fixed for all age-groups.

Tuberculin dilutions for the campaign in India were prepared by the Government of India BCG Laboratory at the King Institute, Madras, from purified tuberculin powder provided by ITC from the State Serum Institute, Copenhagen. Vaccine for the entire campaign was provided by the BCG Laboratory, Madras.

CONTINUATION

Tuberculin testing and BCG vaccination are continuing under the direction of the Central Government Ministry of Health and the Ministries of Health of the individual States. International assistance in the programme is continuing under the joint auspices of UNICEF/WHO, which assumed responsibility upon the termination of ITC. Vehicles, medical equipment and educational materials utilized during the ITC phase of the campaign have been left in the country.

At various times during the course of the ITC programme, supplementary laboratory equipment and chemicals have been provided to the BCG Laboratory in Madras by ITC. ITC has made arrangements for the provision of PPD powder to India for a three-year period.

BCG CONFERENCE

On April 6—7, 1951, a BCG conference was held in New Delhi, attended by health authorities of all States and by representatives of WHO, UNICEF and ITC. The problems in connection with extension of BCG vaccination on a mass scale were discussed. It was recommended that mass vaccination campaigns should be undertaken throughout India as soon as feasible in both urban and rural areas. The employment of "BCG technicians" was approved. It was also recommended that BCG vaccination be integrated with the other public health services of the States, that there should be full-time personnel for this purpose, and that BCG work should also be undertaken at tuberculosis clinics.

RETESTING

Prior to the close of its activities in India, ITC made arrangements jointly with WHO.TRO for a retesting programme to be conducted during the Summer of 1951 in India by a specially trained WHO team. About 8,000 were to be retested in various parts of the country. (For details see Chapter IV-B).

ASIA

PAKISTAN: Danish Dr. Erik Roelsgaard testing 3-year old Zora Mohamood of Karachi.

← PAKISTAN: Dr. H. Mahmood tests a child of Karachi. Observers are: (Left) Col. M. Jafar, Pakistani Director General of Health, and (Right) Sir Aly Tewfik Shousha, Pasha, Director of East Mediterranean Region of WHO.

← INDIA: Indian team members Dr. Harbans Lal and Dr. Jaswant Singh at work in Northern India.

CEYLON: Chief of the campaign in Ceylon, Dr. H. Vanderwall, vaccinating Singhalese children of Kamatawatte.

FROM SOUTH-EAST ASIA TO LATIN AMERICA

← INDIA: The Victoria Girls' College, Patiala, assembles for BCG vaccination.

→ INDIA: Dr. K. S. Ranganathan, assisted by bacteriologist A. V. Oommen, demonstrates vaccine production methods at the Govt. of India BCG Laboratory, King Institute, Madras. Observers are: ITC Laboratory Consultant Dr. Poul Lind (extreme Right) and ITC Regional Director, Dr. L. B. Lauritzen.

← MEXICO: A Mexican-Danish ITC team tuberculin-testing children of the village of Santiago Tuxtla.

→ ECUADOR: In the village of Julio Moreno, Dr. Jorge Higgins (standing, Left), Chief of the Government's Anti-Tuberculosis Service, supervises the progress of the campaign.

INDIA

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN FEBRUARY 1949—JUNE 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	[1] National Teams	International vaccinators (Individuals)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
February-June 1949	136,123	40,357	136,123	40,357	[2]	14
July	46,871	13,728	182,994	54,085	[2]	14
August	42,678	16,205	225,672	70,290	[2]	15
September	45,464	15,629	271,136	85,919	[2]	18
October	57,453	20,075	328,589	105,994	10	18
November	110,982	40,722	439,571	146,716	12	18
December	86,372	29,600	525,943	176,316	[2]	18
January 1950	102,241	28,963	628,184	205,279	[2]	18
February	180,275	53,502	808,459	258,781	16	18
March	169,102	43,162	977,561	301,943	[2]	18
April	203,753	55,068	1,181,314	357,011	57	10
Supplementary Oct. 1949—April 1950[3]	25,328	3,579	1,206,642	360,590	—	—
May	139,236	43,128	1,345,878	403,718	57	9
June	151,318	47,486	1,497,196	451,204	67	9
July	161,487	59,755	1,658,683	510,959	84	9
August	204,099	77,179	1,862,782	588,138	87	9
September	193,402	76,678	2,056,184	664,816	91	9
October	130,783	47,067	2,186,967	711,883	94	9
November	208,528	77,304	2,395,495	789,187	90	9
December	200,563	74,167	2,596,058	863,354	88	9
January 1951	182,758	65,267	2,778,816	928,621	92	9
Supplementary May 15, 1950—Jan. 31, 1951[3]	3,706	598	2,782,522	929,219	—	—
February	193,725	70,062	2,976,247	999,281	96	9
March	246,959	86,611	3,223,206	1,085,892	92	9
April	254,490	88,570	3,477,696	1,174,462	103	8
May	312,563	93,841	3,790,259	1,268,303	104	8
June	278,256	83,243	4,068,515	1,351,546	104	8
Total...	4,068,515	1,351,546	—	—	—	—

[1]) Figures were reported in number of teams, varying from three to six vaccinators per team. See Country Summary.
[2]) Not available.
[3]) Supplementary figures reported late, which cannot be allocated month by month.

PAKISTAN

BACKGROUND

The agreement between the Government of Pakistan and ITC was signed on April 5, 1949. The programme was a large-scale demonstration campaign, primarily for age-groups up to 18 years but with no fixed upper limit.

The ITC Mission arrived at the beginning of August 1949. Originally, ITC assistance was scheduled to end in August 1950. Upon request from the Government of Pakistan, ITC assistance was continued until the end of June 1951.

The operating programme has been supervised from the outset by Lt. Col. M. Jafar, Director General of Health, Pakistan.

PROGRESS OF THE CAMPAIGN

Work started in mid-August 1949, in the schools and hospitals of Karachi. In November, work began in East Pakistan. In 1950, the campaign was extended to Punjab Province, Baluchistan Province, North-West Frontier Province, East Bengal and to a limited extent in Azad-Kashmir. At the end of 1950, work was begun in Sind Province and national teams were continuing their work in provinces where demonstrations had been made. Early in 1951, the campaign was extended to Khairpur. Up to this time, the work of ITC consisted of training national personnel by short demonstrations in each province, in the main using school groups.

In April 1951, during the visit of the Director of ITC to Lahore, the health authorities decided to initiate a full-scale mass vaccination programme in one area, as a possible pattern for subsequently extending the mass campaign to the entire country. Punjab Province was selected for this mass campaign which was launched in rural areas of Rawalpindi district at the end of April. The efforts of the ITC Mission were concentrated on assistance to this mass campaign for the duration of the ITC phase in Pakistan. This campaign proved to be very successful; during May and June, about 113,000 persons were tested in the Punjab mass campaign. More than eighty percent of the population between 2 and 25 years of age were covered by eight vaccinators.

At the termination of the ITC phase on June 30, 1951, work was continuing with national teams in the city of Karachi and the following provinces: Sind, Baluchistan, Khairpur, Punjab, North-West Frontier Province, and East Bengal. International assistance was to be continued under the auspices of UNICEF/WHO beginning in the Autumn of 1951.

The greatest number of national vaccinators at work in one month was 58; the greatest number of international vaccinators was 6. In the later stages of the ITC phase, because of the shortage of doctors and nurses, a large number of "BCG technicians" were utilized, with extremely satisfactory results. In March 1951, for example, the 58 national vaccinators consisted of the following: 22 doctors, 10 nurses, 12 compounders, 3 midwives, 6 local health visitors, 5 sanitary inspectors. In the mass campaign in the Punjab, teams consisted of one doctor and six technicians.

In all, 949,987 persons were tested in Pakistan and 284,500 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

A two-test tuberculin testing method was first used in Pakistan: Moro patch test in the youngest age-groups and Mantoux 1 T.U. and 10 T.U. for others. Trials were then made with a single-test method of 10 T.U. for older persons. Beginning in August 1950, a single pre-vaccination Mantoux test of 5 T.U. was used for all ages.

At outset of the campaign in Pakistan, ITC procured the vaccine from the BCG Laboratory

of the King Institute, Madras, India; subsequently, because Pakistani authorities feared that public knowledge of the source might cause serious difficulties in the campaign in the light of Pakistani-Indian relations, the Government of Pakistan requested ITC to provide vaccine from another source. From the beginning of 1950, vaccine was supplied from the State Serum Institute, Copenhagen. Tuberculin dilutions were originally supplied from the King Institute, Madras, India, and later from the State Serum Institute in Copenhagen. During 1950, ITC assigned a Danish technician to the Bureau of Laboratories, Karachi, to make the tuberculin dilutions from stock solutions of PPD shipped from Copenhagen. Since December 1950, dilutions have been prepared by national personnel.

CONTINUATION

The Government of Pakistan is continuing tuberculin testing and BCG vaccination as part of the regular health service. The work is directed by the provincial directors of health through their tuberculosis officers, and utilizing mobile field units. It is the hope of the Government to cover the total population in age-groups 2 to 20 (approximately 50 percent of the population) in the course of five years.

The vehicles and medical equipment utilized by ITC during the campaign in Pakistan were left in the country, title being retained by UNICEF for the present during the period of continued UNICEF/WHO assistance.

Construction of a BCG laboratory in Karachi began in January 1951. ITC has provided equipment and chemicals for this laboratory. A Pakistani doctor was trained in BCG production in Europe in 1950—51 under a WHO fellowship.

Equipment for a small laboratory to produce tuberculin dilutions has also been provided by ITC, as well as assistance in training national personnel. ITC has arranged to provide Pakistan with PPD stock solution until July 1, 1954.

Arrangements have been made by the ITC and UNICEF/WHO to continue to provide BCG vaccine from the State Serum Institute, Copenhagen, for the present in order that the continuing campaign may not be interrupted pending the beginning of vaccine production at the BCG laboratory in Karachi.

PAKISTAN

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN AUGUST 1949—JUNE 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
August 1949	2,007	931	2,007	931	1	6
September	7,602	2,952	9,609	3,883	3	6
October	13,346	3,485	22,955	7,368	12	6
November	11,896	3,155	34,851	10,523	12	6
December	14,270	4,431	49,121	14,954	12	6
January 1950	15,893	4,162	65,014	19,116	17	6
February	14,512	5,343	79,526	24,459	20	6
March	29,105	8,345	108,631	32,804	25	5
April	44,714	12,322	153,345	45,126	25	6
May	37,329	9,575	190,674	54,701	31	6
June	41,552	14,551	232,226	69,252	32	6
July	27,091	8,704	259,317	77,956	31	6
August	45,169	11,887	304,486	89,843	20	6
September	57,704	14,231	362,190	104,074	21	6
October	46,791	12,664	408,981	116,738	24	6
November	77,496	29,132	486,477	145,870	27	6
December	60,190	21,961	546,667	167,831	28	6
January 1951	53,985	20,762	600,652	188,593	41	4
February	62,569	24,662	663,221	213,255	44	4
March	67,512	19,163	730,733	232,418	58	4
April	47,245	12,589	777,978	245,007	55	4
May	66,005	20,389	843,983	265,396	37	4
June	106,004	19,104	949,987	284,500	37	5
Total...	949,987	284,500	—	—	—	—

ECUADOR

BACKGROUND

BCG vaccination by the oral method was conducted in Ecuador for many years prior to the ITC programme, under the direction of the Liga Ecuatoreana Antituberculosa (LEA). The vaccine was produced at laboratories both in Quito and Guayaquil.

The agreement between the Government of Ecuador and ITC was signed in July 1950, and the ITC Mission commenced work shortly afterwards.

The programme in Ecuador was an over-all campaign with upper age limits of 20 years in the lowland areas and 30 years in the mountain areas.

Dr. Jorge Higgins, Chief of the Government's Anti-Tuberculosis Service, directed the programme for the Government of Ecuador. The campaign was conducted with the cooperation of the LEA.

PROGRESS OF THE CAMPAIGN

The campaign began at the end of July 1950 in Guayaquil, among school children and the general public. The Government set up nine national teams at outset. The teams were concentrated in one province at a time, moving on to another province on completion of the work. Work was begun in the lowlands and coastal areas and thereafter shifted to the mountain provinces.

The programme was planned to last for one year, and as a result of careful national organization, full cooperation of the local authorities, and extensive educational publicity work, the ITC phase was completed within the allotted time.

At peak there were 27 national and 13 international vaccinators at work.

In all 646,702 persons were tested and 346,242 were vaccinated. (For month-by-month breakdown, see Table 1.)

The programme in Ecuador was also planned as a demonstration for Latin America, to train medical personnel of other countries of the area in mass vaccination methods and techniques. During the ITC phase of the campaign, UNICEF and WHO arranged for visits to Ecuador by medical teams from El Salvador, Peru, Jamaica and Costa Rica; these teams worked in the field in cooperation with Ecuadorean and ITC personnel.

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

Originally the tuberculin testing method was Moro patch test for children up to 12, Mantoux 10 T.U. above. After comparison studies in a number of areas, a single tuberculin test of Mantoux 10 T.U. was adopted for all age-groups, subsequently changed in August 1950, after about one month of work, to Mantoux 5 T.U.

Vaccine for the entire campaign was provided by ITC from the laboratory of the BCG Institute in Mexico City.

Tuberculin dilutions were prepared at the National Institute of Hygiene, Guayaquil, from stock solution provided by ITC from the State Serum Institute, Copenhagen. A technician was sent by ITC to Guayaquil to prepare the tuberculin dilutions and to train national personnel in this work.

CONTINUATION

The Government of Ecuador has set up a national office for BCG vaccination under the National Anti-Tuberculosis Service of the Direction-General of Public Health, for continuation of tuberculin testing and BCG vaccination throughout Ecuador. Twelve vaccination centres are being set up in different parts of the country, plus a mobile team which will move

from centre to centre, intensifying the work at each centre periodically.

Arrangements have been made by ITC to provide tuberculin stock solution from Copenhagen for a period of three years.

ITC has assisted with equipment and supplies for the new BCG production laboratory at the National Institute of Hygiene in Guayaquil and a bacteriologist was trained in Europe and Mexico City during 1951. For the period until the new laboratory is established, vaccine supplies will continue to come from the BCG Laboratory in Mexico City.

Vehicles and equipment for the vaccination centres and mobile teams have been left in the country by ITC.

RETESTING

A retesting programme under joint ITC and WHO.TRO auspices was carried out during the Spring of 1951, by trained special teams. About 5,500 persons were retested in the city of Guayaquil and in the Provinces of Loja, Imbabura, El Oro, Manabi, and Guayas. For results, see Chapter IV-B.

ECUADOR

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN JULY 1950—JUNE 1951

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
July 1950	5,618	1,623	5,618	1,623	27	12
August	81,744	32,384	87,362	34,007	27	12
September	79,986	47,468	167,348	81,475	27	12
October	50,172	25,655	217,520	107,130	27	13
November	49,558	29,542	267,078	136,672	27	13
December	23,598	15,394	290,676	152,066	20	13
January 1951	61,128	36,168	351,804	188,234	23	13
February	75,826	36,061	427,630	224,295	23	13
March	54,457	29,419	482,087	253,714	23	13
April	77,630	44,468	559,717	298,182	23	12
May	53,859	28,905	613,576	327,087	15	12
June	33,126	19,155	646,702	346,242	15	12
Total...	646,702	346,242	—	—	—	—

MEXICO

BACKGROUND

BCG vaccination has been practiced in Mexico for some years, the oral method for newborn babies and the intradermal method for older children and young adults. Since January 1948, vaccine has been produced in the Laboratory of the BCG Institute, Mexico City, under the direction of Dr. Alberto P. Leon.

The agreement between the Government of Mexico and the ITC was signed on April 21, 1950. The programme in Mexico was to be a demonstration programme for six months, in the larger cities and towns.

There was no fixed upper age limit although work was to be concentrated on the age-groups between 1 and 18.

The Government Liaison Officer for the campaign was Dr. Miguel Jimenez, Director of the National Committee for the Fight against Tuberculosis.

PROGRESS OF THE CAMPAIGN

Pilot work for the purpose of comparing the potency of the Mexican vaccine with that used in ITC-aided campaigns elsewhere began in Mexico City in May 1950, by a special team trained and directed by WHO.TRO. Similar studies were carried out simultaneously by WHO.TRO in Denmark. Results showed that the Mexican and the Danish vaccine had practically the same potency.

The demonstration campaign proper began in July in the State of Hidalgo, where it was completed in August. Thereafter work was undertaken in the States of Vera Cruz, Tamaulipas, Nuevo Leon, and Coahuila. The demonstration continued for about two to three weeks in each State.

An intensive counter-propaganda campaign had been launched in Mexico City by opponents of the vaccination even before the start of the demonstration work. Rumours and misinformation were published in the newspapers and in July the Ministry of Health found it necessary to issue a public statement supporting BCG vaccination. Since most of the opposition had been voiced against the oral method of vaccination (i.e. for newborn babies and outside the ITC programme) the Ministry banned further oral vaccination pending further study.

The ITC Mission experienced a number of administrative difficulties with the Government in connection with the passage of vehicles and medical equipment through customs, relations between the ITC Mission Chief and the health authorities, and provision of funds to meet Mission expenses.

At the end of October, the Minister of Health halted the programme. At the beginning of November the Director of ITC met with officials of the Ministry. During this meeting the administrative difficulties were adjusted and the Director of ITC stated that ITC would continue its demonstration programme if the Ministry would prepare an effective working plan which would allow proper utilization of personnel and supplies. When no such plan was forthcoming, it was decided at the end of November to terminate the demonstration by mutual agreement. The ITC Mission was withdrawn shortly afterwards, as well as all ITC equipment, except that provided for the BCG laboratory, and small quantities of medical equipment.

At peak there were 15 national and 2 international vaccinators at work.

In all 179,975 persons were tested and 83,880 were vaccinated. (For month-by-month breakdown, see Table 1).

TECHNIQUE; SOURCE OF VACCINE AND TUBERCULIN

A single method of tuberculin testing was used in Mexico for all age-groups, i.e. Mantoux 5 T.U.

Tuberculin dilutions were prepared in the BCG Laboratory, Mexico City, from stock solutions supplied by ITC from the State Serum Institute, Copenhagen. Vaccine was provided by the Government from the Laboratory of the BCG Institute, Mexico City.

The BCG Laboratory in Mexico City meets high technical standards and has been approved by the WHO Committee on Biological Standardization. ITC has contributed supplementary equipment for the BCG Laboratory as well as complete equipment and chemicals for the preparation of tuberculin dilutions.

MEXICO

Table 1

STATISTICAL SUMMARY OF BCG VACCINATION CAMPAIGN MAY—OCTOBER 1950

Based on Monthly Reports (C-Forms)

Month	Monthly Total		Cumulative Total		Number of vaccinators	
	Number of persons		Number of persons			
	Tested	Vaccinated	Tested	Vaccinated	National	International
(1)	(2)	(3)	(4)	(5)	(6)	(7)
May-June 1950	2,709	1,539	2,709	1,539	0	1
July	8,085	3,441	10,794	4,980	14	2
August	38,806	16,532	49,600	21,512	15	2
September	79,714	42,634	129,314	64,146	15	2
October	50,661	19,734	179,975	83,880	15	2
Total...	179,975	83,880	—	—	—	—

NOTE: The work in May—June was pilot-team work.

IV.

SOME RESULTS OF THE ITC PROGRAMMES

A. TUBERCULIN SENSITIVITY IN VARIOUS COUNTRIES

Preliminary analysis of data on tuberculin sensitivity revealed in different countries in the course of the ITC programme is presented in this Chapter, in the 20 charts which follow. The charts include the results of approximately 13,000,000 tuberculin tests in the following countries:

Europe: Austria, Czechoslovakia, Germany[1]), Greece, Hungary, Malta, Poland, Yugoslavia.

North Africa: Algeria, Morocco, Tangiers, Tunisia.

Middle East: Egypt, Israel, Lebanon, Syria.

Asia: Ceylon, India.

Latin America: Ecuador, Mexico.

The graphs show pre-vaccination allergy (percentages of tuberculin reactors) by age. In countries where complete statistics are available, averages are given for the entire country. For other countries, curves are given for large areas (provinces, etc.) when such data are available. Where statistics are available only for smaller administrative units, such as districts or towns, examples of these are included. In some of the charts, curves are given for males and females. In one case (Tangiers) separate curves are given for the city and the surrounding rural area. It should be noted that the campaign in Syria was centred in the cities and therefore the curves cannot be considered representative for the entire country. The numbers of tested persons are stated in each of the charts. They vary greatly from country to country and in some instances represent only a small portion of the material which will be available later.

A few remarks may be made on levels of tuberculin sensitivity for different countries and areas. Data from Poland, Tangiers (city) and India (cities), show the highest percentages of tuberculin reactors, while the lowest levels are in Lebanon and some Greek provinces. Great variations are observed from district to district in Austria and Greece. On the whole, Eastern-European countries and countries in the Far East show a high level of tuberculin sensitivity while the countries in the Eastern Mediterranean region (including Malta, Greece, Lebanon and Syria) are low, Egypt being the exception. Ecuador and Mexico seem to occupy a middle position.

As will be noted, the difference in tuberculin sensitivity between the two sexes is slight in the European countries. In countries outside Europe, the male-curve is generally the higher except for pre-school age-groups. This is most marked in the Arabic countries.

Further analysis and additional data on tuberculin sensitivity will be published in the forthcoming statistical documentation of the ITC country programmes, to be prepared by WHO.TRO and published by ITC.

[1]) Work by the Scandinavian organizations, etc. outside the ITC programme.

Chart 1.

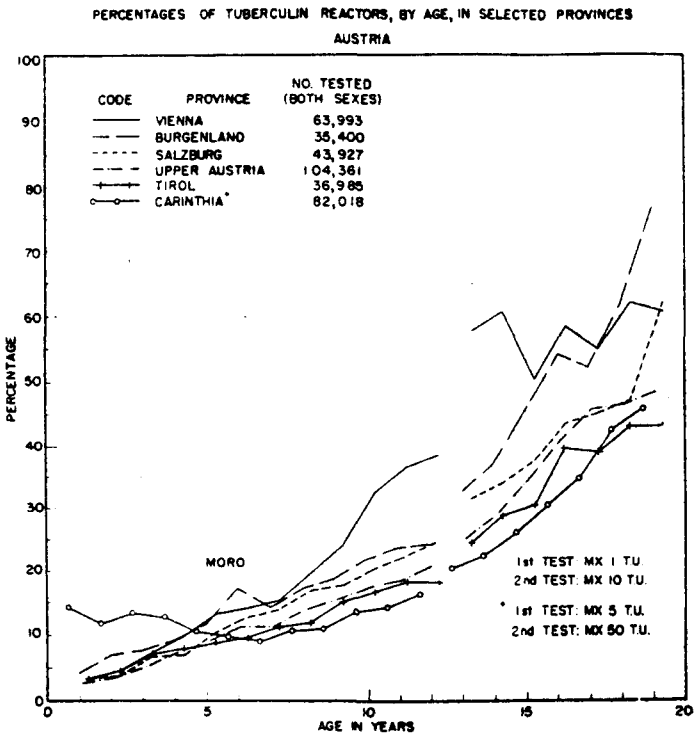


Chart 2.

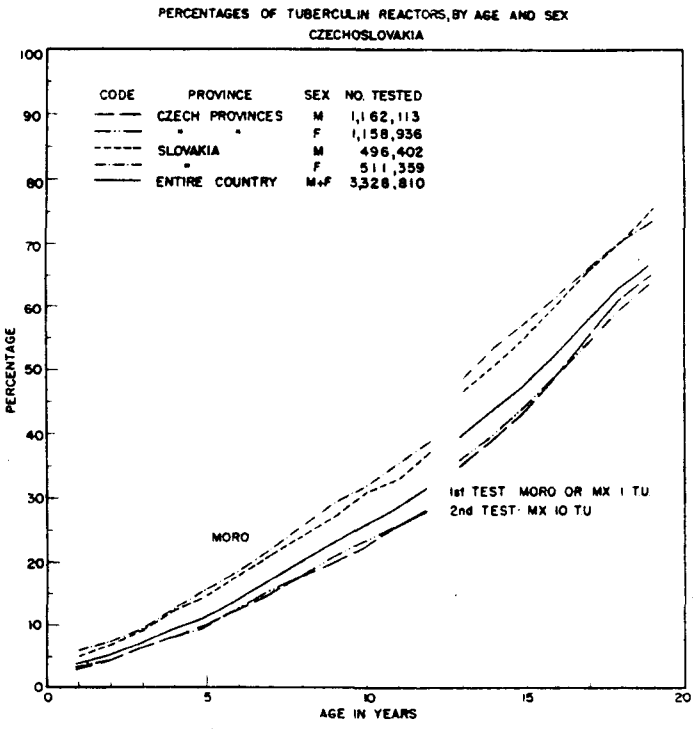


Chart 3.

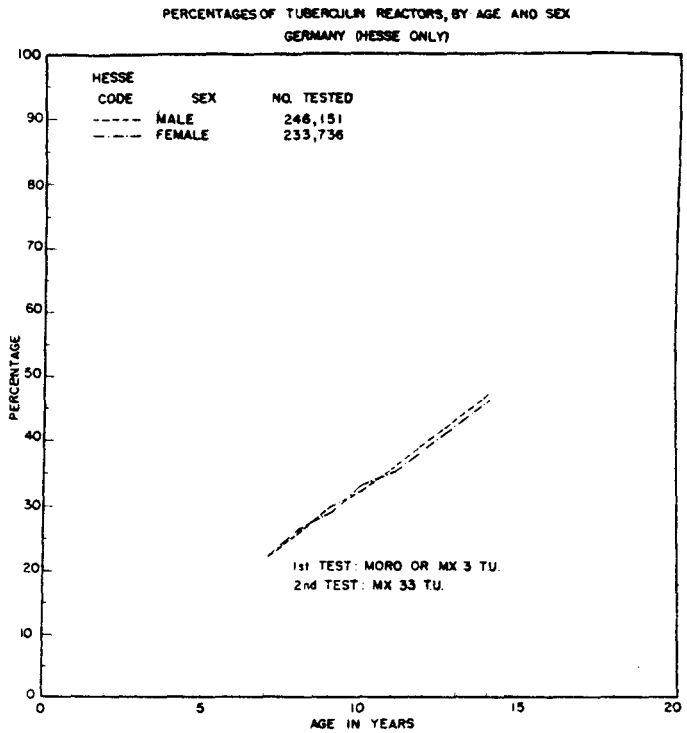


Chart 4.

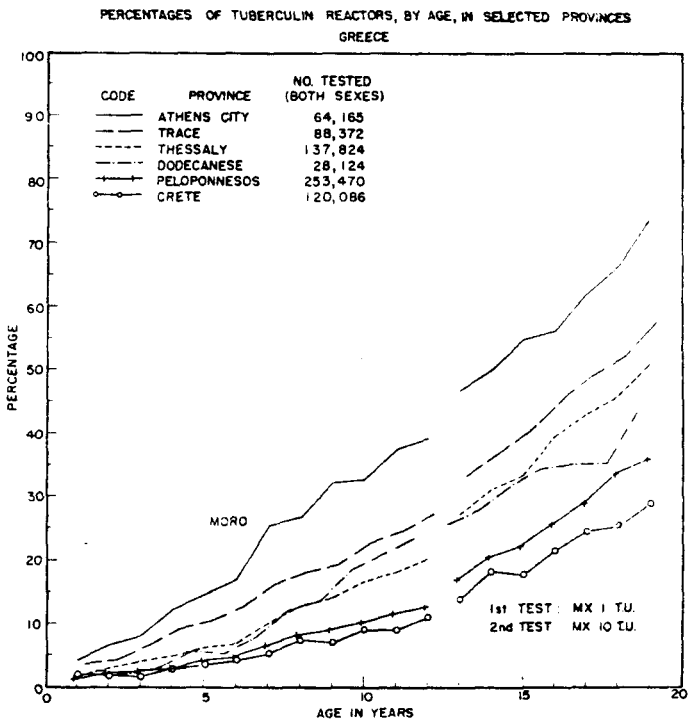


Chart 5.

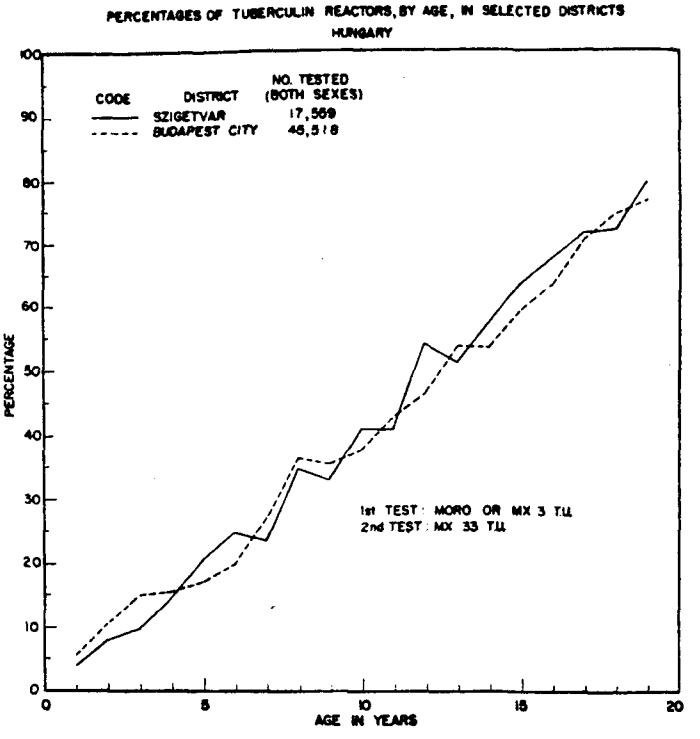


Chart 6.

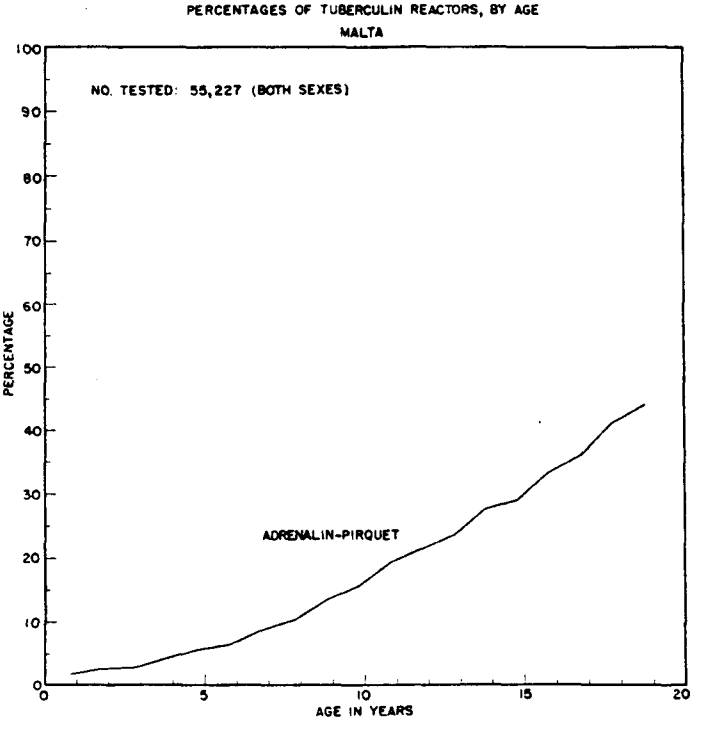


Chart 7.

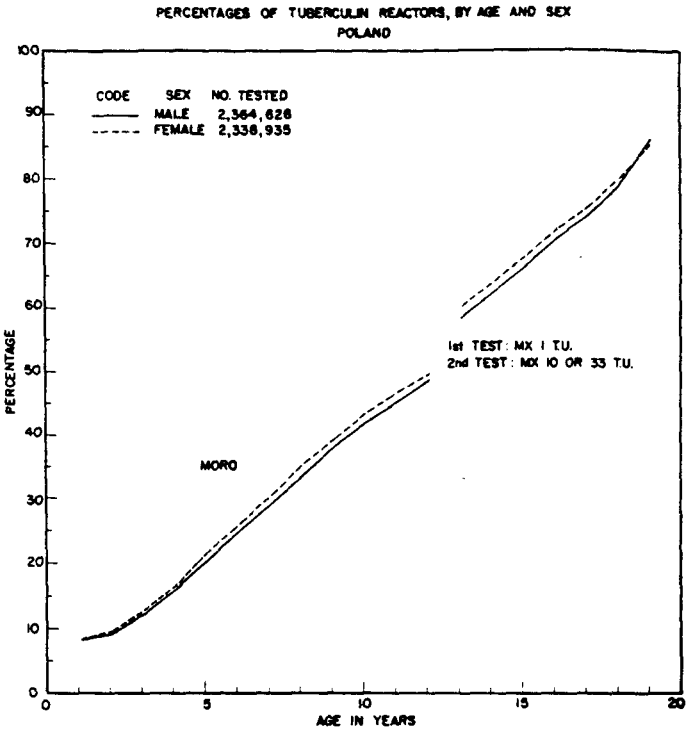


Chart 8.

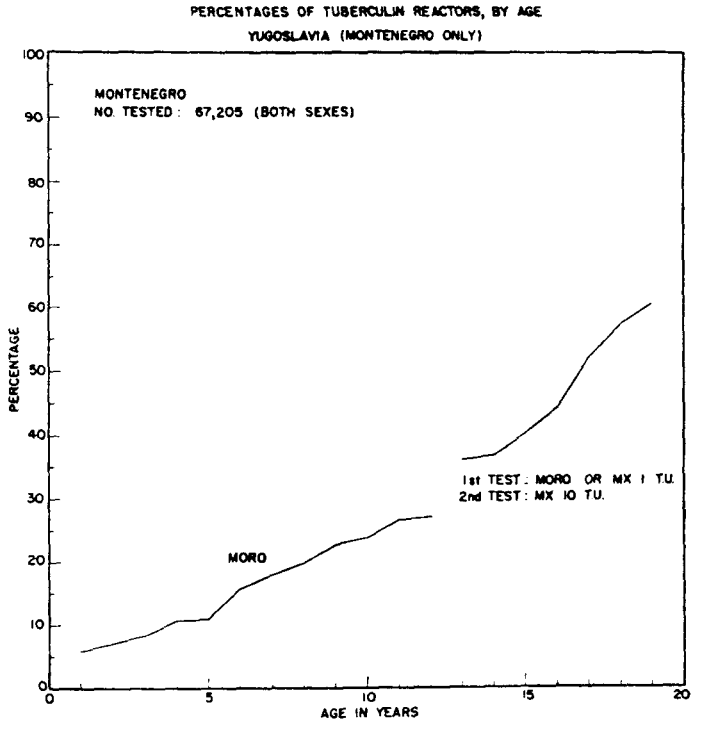


Chart 9.

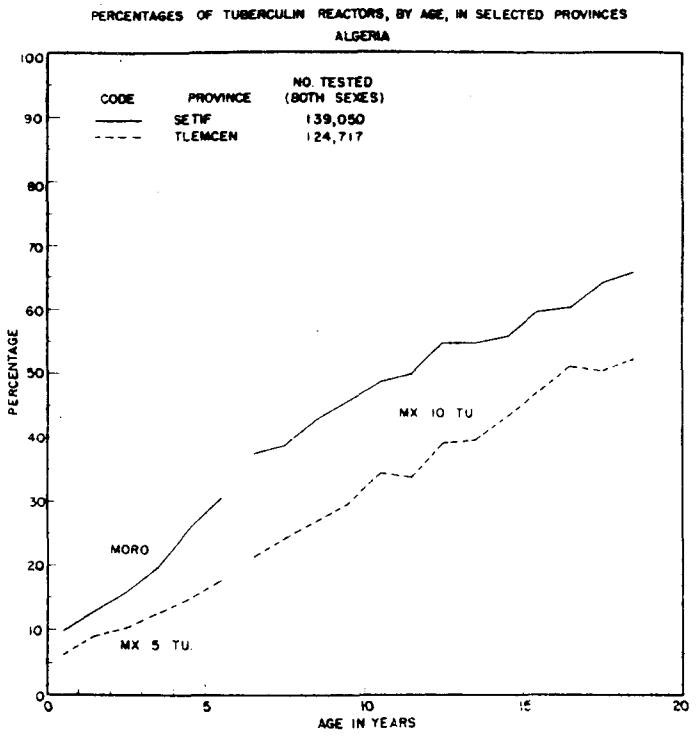


Chart 10.

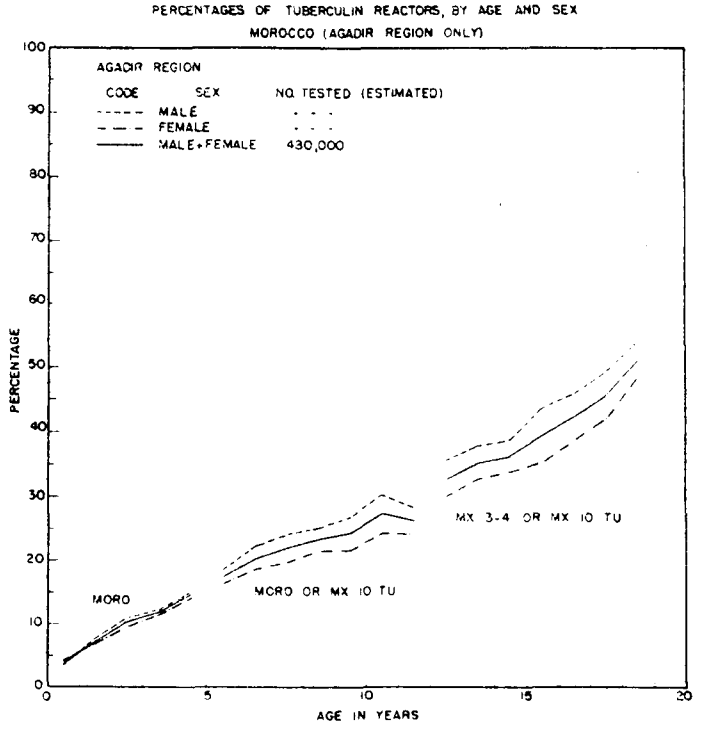


Chart 11.

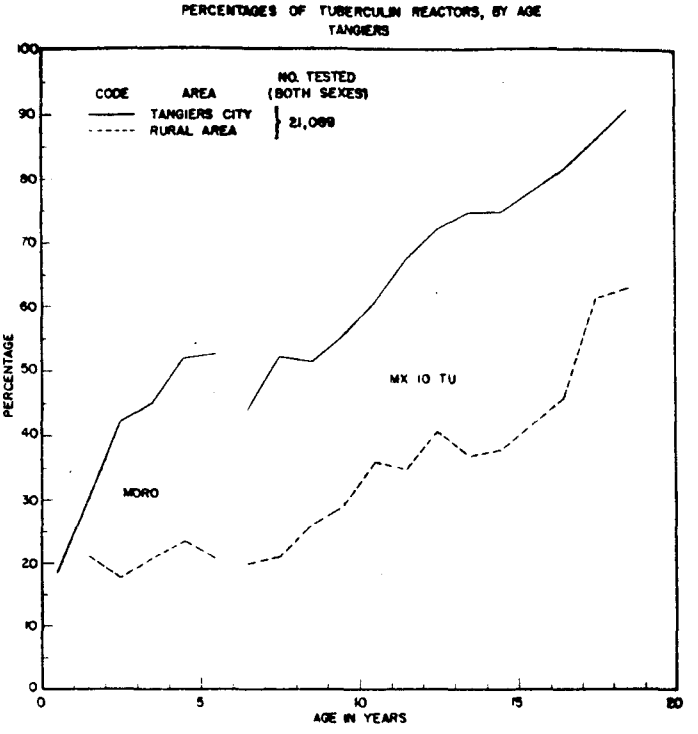


Chart 12.

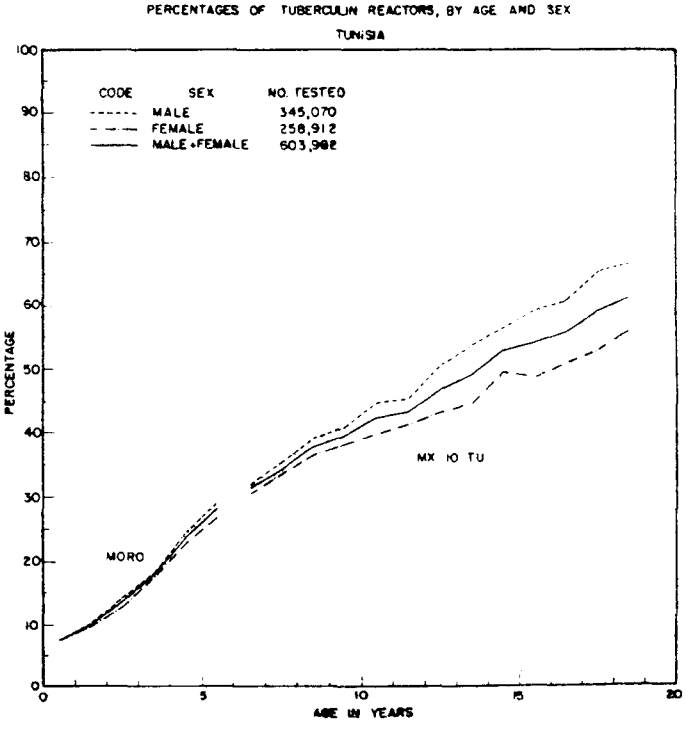


Chart 13.

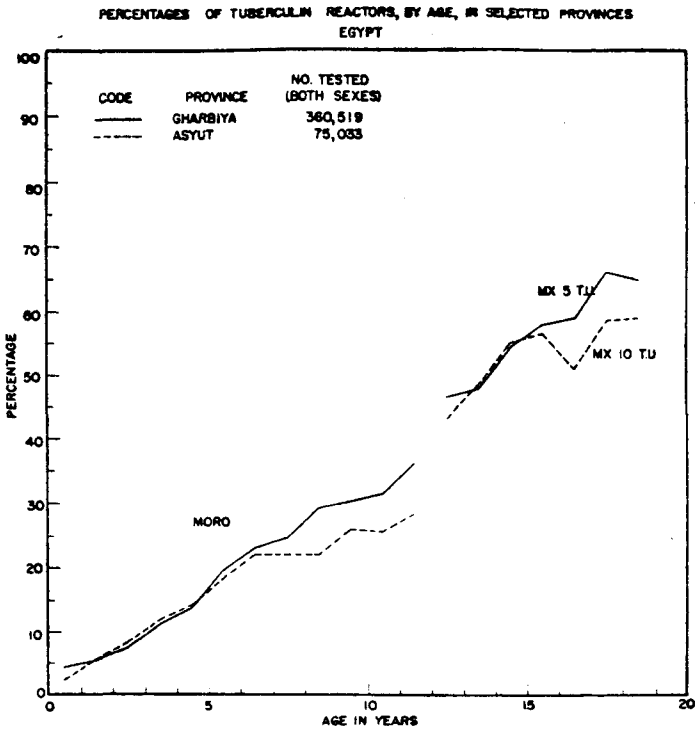


Chart 14.

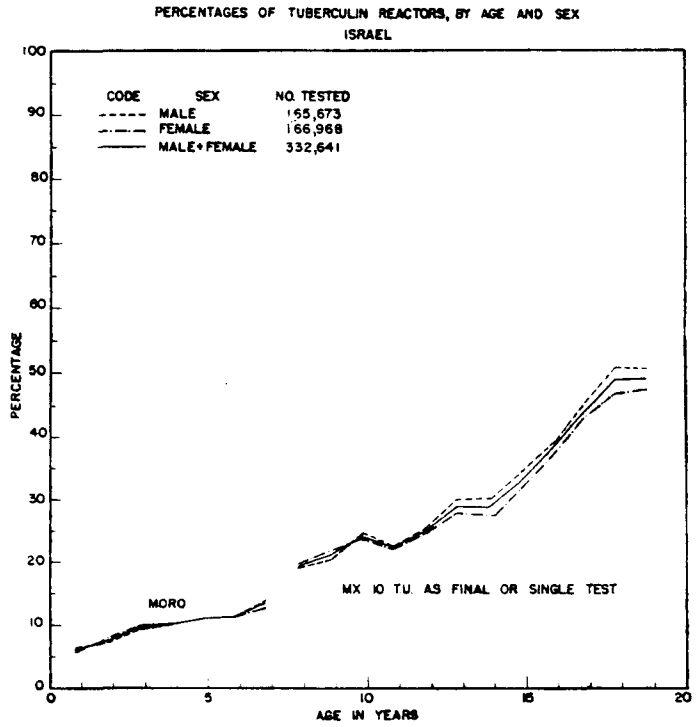


Chart 15.

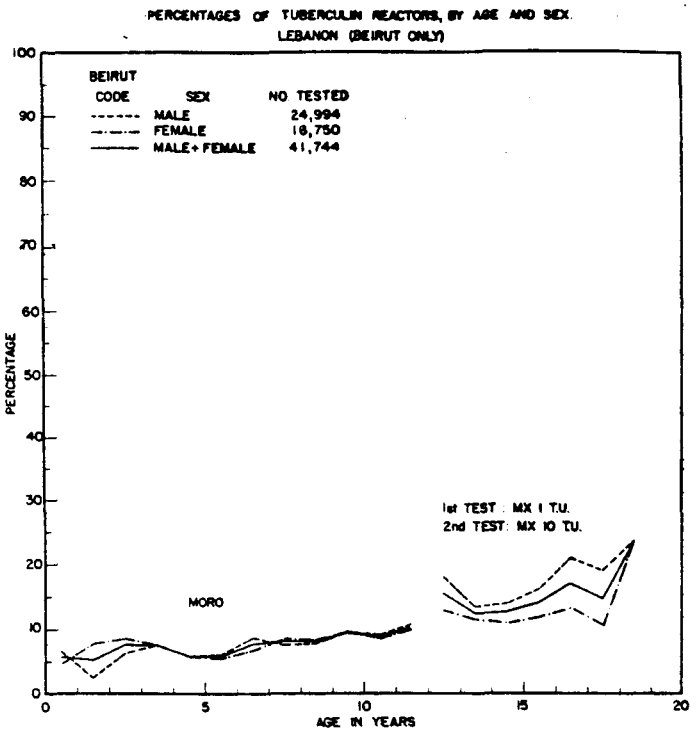
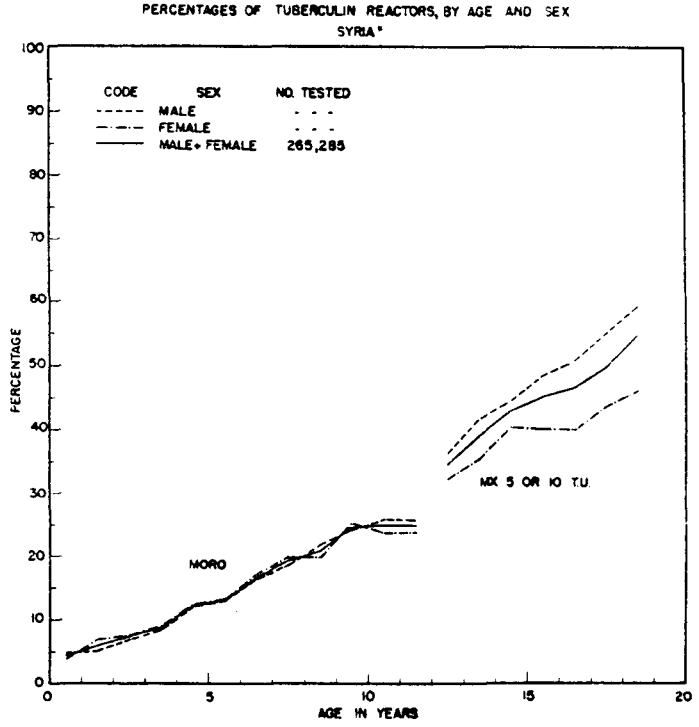


Chart 16.



* The Campaign in Syria included only Aleppo, Damascus, Hama, Homs and Latakia cities, and Djebel Druze and Hauran Rural districts.

Chart 17.

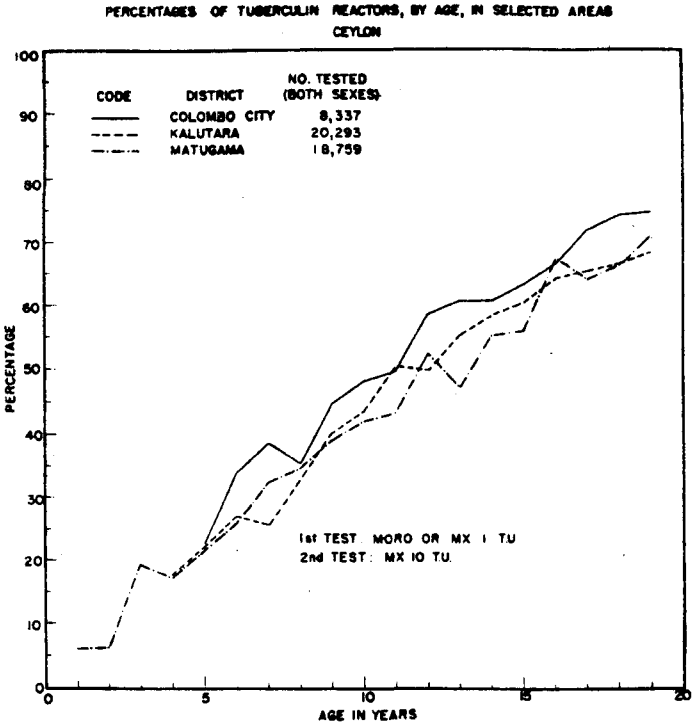


Chart 18.

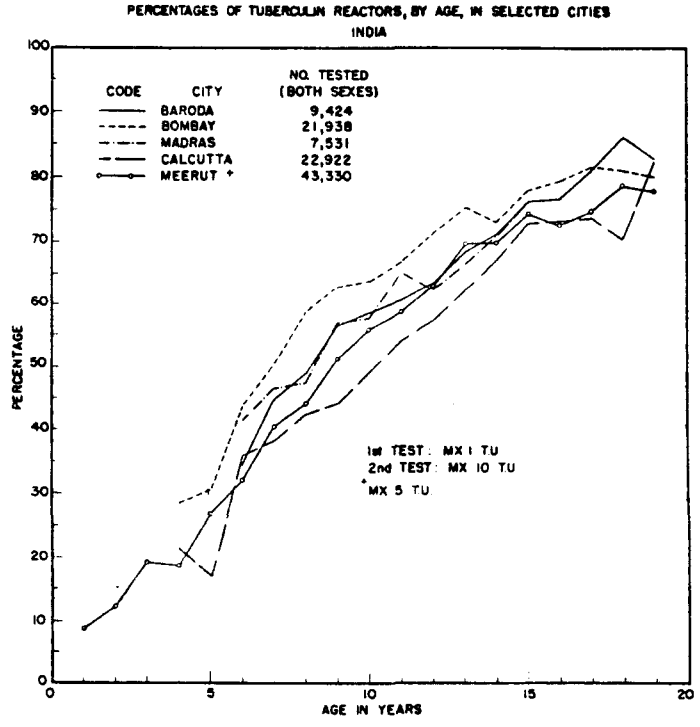


Chart 19.

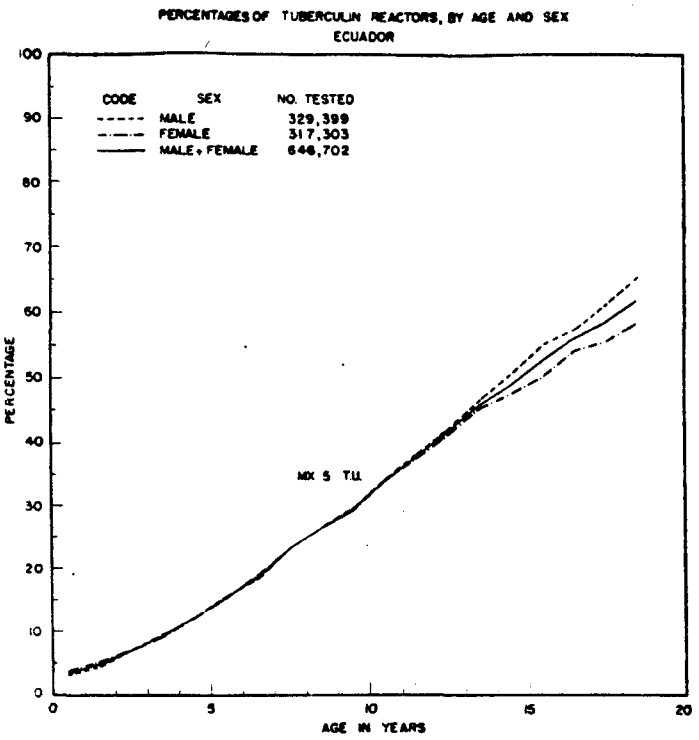
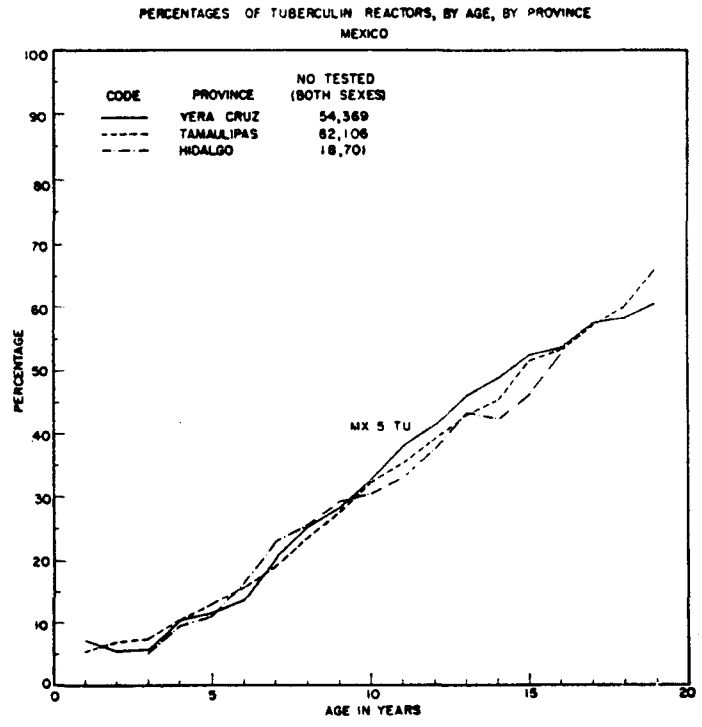


Chart 20.



B. RETESTING PROGRAMMES IN CERTAIN COUNTRIES

Since the Autumn of 1950 a series of surveys of tuberculin allergy following BCG vaccination has been carried out in Greece, Syria, Egypt, India and Ecuador through the cooperation of the WHO.TRO and ITC. At the time of writing this report the field work is practically completed, although not all of the records have arrived in Copenhagen. A unique feature of these surveys is that the programme of retesting for each country was planned beforehand and most of the retesting teams were trained by TRO. In Syria, Egypt and Ecuador a single team made the survey for each country.

Previously some retesting was done in various countries participating in the BCG programme. In two countries efforts were made to cover large numbers. In Czechoslovakia about 10,000 vaccinated persons were retested in 1949, and in Poland nearly 100,000 had been retested up to June 1950. The results for these countries were reported in the published documentation of the campaigns[1]), but owing to the great variability of the material, no definite conclusion could be drawn.

During the latter part of September 1950 two senior members of TRO went to Greece to initiate a programme of retesting. The work was planned in conjunction with the Chief and the Statistician of the ITC Mission. Special effort was made to obtain representative samples of vaccinated school children in both urban and rural areas, as well as to include a sufficient number of persons vaccinated with every alternate batch of vaccine that had been used in the Greek campaign. As far as possible every vaccinated child was retested and each test was read in each school selected. The field work was started by three Danish nurses who had received special training from TRO. Later, four Scandinavian nurses from the ITC Mission in Greece joined the work.

A single Mantoux test of 10 T.U. was chosen for the retesting. In each school one nurse measured the reactions 3—4 days after the testing. New pupils who had not been vaccinated were also tested in order to ensure that the nurse read the tests without the bias of knowing who were vaccinated. The reader was trained to observe and measure the induration of the reactions but not trying to interpret the significance of the findings. The most important point as far as methodology is concerned is that the reaction of the test is not read as "positive" or "negative", but the induration is carefully measured. As a matter of fact, the bimodal frequency distribution of pre-vaccination allergy, dividing the population into naturally-infected and non-infected groups, no longer obtains among the BCG-vaccinated even when a fractional dose of the vaccine is used. In a BCG-vaccinated population the distribution of post-vaccination allergy is unimodal, and the important question is not whether the individuals have been infected by BCG, but what level of allergy they have developed. The best criterion in assessing the degree of post-vaccination allergy in a population is the mean size of induration of the tuberculin reactions.

A total of some 54,000 vaccinated school children were retested in Greece, which corresponds to 5 percent of all vaccinated persons, covering 59 batches of the vaccine used during the period from April 1948 to June 1950.

Simultaneously a retesting programme was carried out in Syria, limited to the two cities of Damascus and Aleppo. The work was done by a team of two trained nurses; one did the testing and the other read all the tests. A Mantoux test of 5 T.U. was chosen for retesting since the same had been used as a single pre-vaccination test for children over 12 years of age. The examination included the measurement of the size of the vaccination lesions and palpation of the cervical and axillary glands. A total of 5,400 school children were retested and examined.

Similar programmes were carried out in Egypt, India and Ecuador, resulting in a retesting of 11,000, 8,000 and 5,000 school children respectively. As in Syria, a team of one doctor and two trained nurses did the work in each country, one nurse for retesting and the other for reading the tests.

The data on retesting are being analyzed by TRO and the details of the findings will be published elsewhere. For the purpose of this report it may be pointed out that there are considerable variations in the results from different countries. In Egypt, Greece and Syria,

[1]) "Mass BCG Vaccination in Czechoslovakia, 1948—49" and "Mass BCG Vaccination in Poland, 1948—49", prepared by WHO Tuberculosis Research Office and published by ITC.

where the Danish vaccine was used, the degree of tuberculin allergy after vaccination was higher among the Greek and Syrian children than among the Egyptians, but they all had lower allergy than the Danish school children in Denmark. The same is found among the children in Ecuador and India who were vaccinated with vaccine from the laboratories in Mexico City and Madras respectively. The Egyptians seem to be on the other extreme of the scale as compared with the Danes. The Ecuadoreans and the Indians occupy an intermediate position, and they show a level of allergy still higher than the Egyptians.

The cause or causes of these variations are not definitely known at present, but the significance of such marked differences is obvious. They will have important implications in the conduct of the BCG campaigns in different countries, no matter whether the widely different results are due to racial characteristics or to the handling of the vaccine. Arrangements are being made to send a TRO research team to investigate the problem in Egypt.

V.

FORTHCOMING PUBLICATION

In the course of the three-year programme, the field personnel of ITC gathered invaluable experience in the technical and organizational problems involved in conducting a mass BCG vaccination campaign. In order that this experience may be available to countries which wish to launch such campaigns, as well as to national authorities who may find in this experience useful guides for other programmes in the field of public health, the knowledge acquired is being "distilled" in a special publication.

This publication, "Mass BCG Vaccination Campaigns — A Practical Guide", will concern itself with a detailed description of the methods for conducting such campaigns — including a discussion of special operational and technical problems, a highly detailed description of the methods of organizing a campaign, and detailed instructions for the different categories of participating personnel.

The "Guide" will be available in 1952 from:

UNICEF EMRO
24, Rue Borghèse
Neuilly-sur-Seine
France.